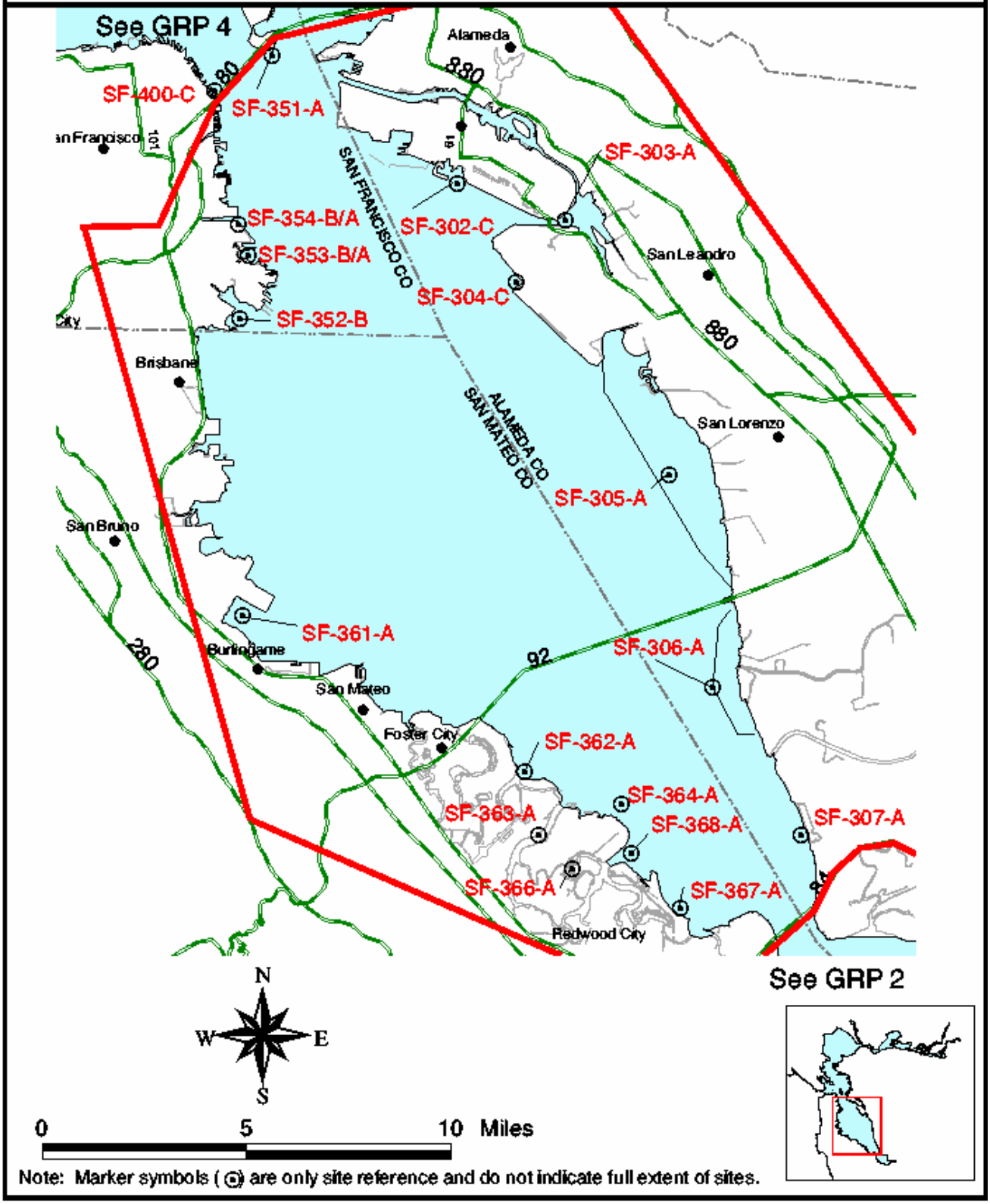
SF Geographic Response Area 3
Anchorage 9
Environmentally Sensitive Sites



Note: Marker symbols (⊙) are only site reference and do not indicate full extent of sites.

Geographic Response Plan - 3

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Last Edit O3/16/2004

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SF-305		San Lorenzo Creek to Johnson Landing			
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SF-307		Coyote Hills Slough Marshes			
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SF-352		South Basin, Hunters Point			
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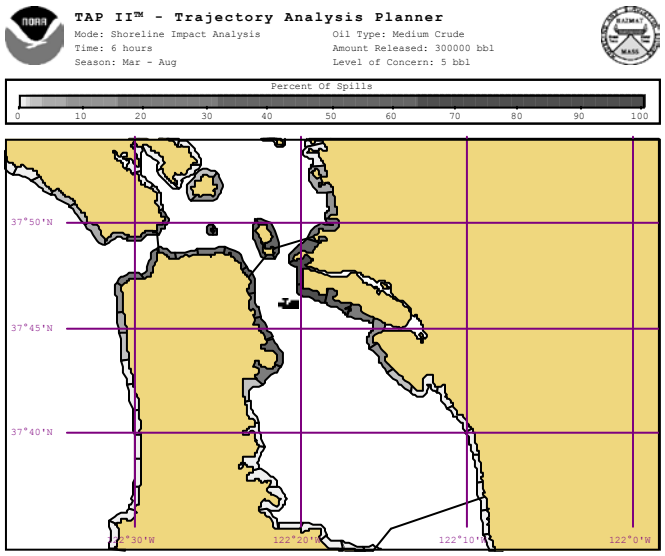
ACP Sensitive Site Resource List - GRP 3

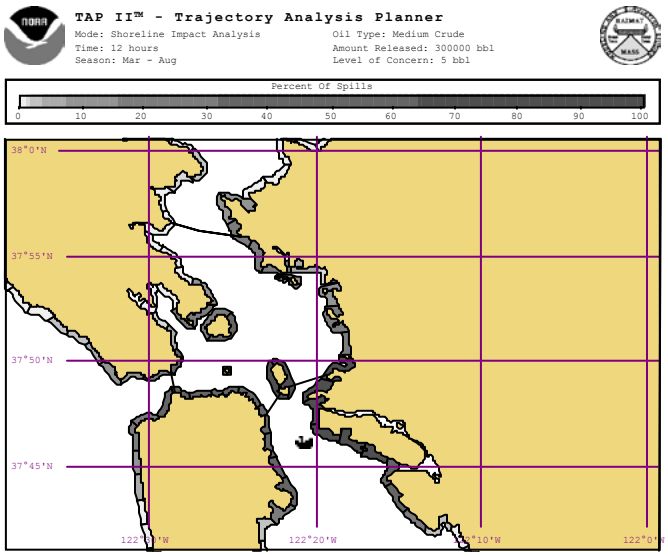
SITE	SUB	SITENAME / SO	Strategy Objective	HBOOM	SWBM	XBOOM	SORB	Bboat / skiff	#	Type Skimmer	Special Equipment	Deploy Personnel
2-302	. 1	Alameda Eelgrass Beds		3000				2 / 0				**6**
		7	Deflect oil past eelgrass bed and toward collection / protection deployments of San Leandro Bay: 2-303.									
2-303	. 1	San Leandro Bay		1200	250	250 TBB	200	2/1	1	portable &VT	Bboat: very shallow draft	**9 (30 support personnel)**
		5,6	Direct oil away from Alameda shore to shoreside collection at Bay Farm Island Bridge.									
	. 2	San Leandro Bay		1500				2/1	1	sps		**8**
		7	Divert oil away from Elsie Romer Bird Sanctuary to collection in the San Leandro Channel.									
	. 3	San Leandro Bay		3000			100	2/1	1	SPS or mobil		
		5	Exclude oil from entering the bay via Oakland Estuary.									
2-304	. 1	Bay Farm Island Eelgrass Beds		1000				1/1				**4 PERSONS**
		7	Minimize oil moving into the area by positioning a deflection boom from the runway point to diver oil borne on currents past.									
	. 2	Bay Farm Island Eelgrass Beds		2000	4000		2000	2/2	1	portable & VT		**8 PERSON**
		6	Maximize oil capture at this locale with deflection to shore skimming unit.									
2-305	. 1	San Lorenzo Creek to Johnson Landing		18800	800'		500'	25/28	3	portable	10,000' 1/2" anchor line, 5 vac trucks,	**108**
		5	Prevent oil from entering the marsh. Should oil enter the marsh, contain oil to the smallest possible area of marsh.									
2-306	. 1	Alameda Creek Marshes		10000			15000	17/2				**34**
		5&8	Exclude oil from channels or stranding in the marsh. Divert it to less sensitive and more accessible shorelines on either side.									
2-307	. 1	Coyote Hills Slough Marshes		1000	500		4000	3/1				**10**
		567	Exclude oil from channels and marsh, and to divert it to shorelines less sensitive and more accessible for oil recovery and cleanup. The following site-specific									
2-351	. 1	San Francisco South Collection/Economic Strat.		1600'				2/1				**8**
		8&7	Prevent oiling of harbor seals and rocks near where they haul out. Avoid driving hauled out harbor seals into the water.									
2-351	. 1	Yerba Buena Island		3000'				5/2			3000' 1/2" anchor line	**14**
		8&7	Prevent oiling of harbor seals and rocks near where they haul out. Avoid driving hauled out harbor seals into the water.									
2-352	. 1	South Basin, Hunters Point		3500				3*/0	1/1	SFS/SSS	*shallow draft Bboat	**8-12**
		5,8	Exclusion/protection booming to prevent oil from reaching marsh in South Basin or beaches at Candlestick Point.									
	. 2	South Basin, Hunters Point		500				1*/0			*shallow water Bboat	**3**
		7	Deflect oil away and past site.									
2-353	. 1	Heron's Head Park - India Basin			80		80					**2**
		6	Prevent oil from entering small tidal inlets to inner ponds and lagoons.									
	. 2	Heron's Head Park - India Basin		2500				4/1				**12**
		5	For conditions when oil is likely to enter India Basin, such as easterly winds, deflect oil away from site to south shore.									
2-354	. 1	Islais Creek - Pier 94 Saltmarsh		1000	50		50	1/1				
		5,8	Exclude oil from entering inlet and protect site from oil.									
2-361	. 1	Airport Mudflat		8200				4/4			4 shallow draft boomboats	**25-30**
		5	Exclude oil from entering slough openings and cove.									
2-362	. 1	Belmont Slough		4000		200 TBB		3/0	1	SPS		**14**
		5	Prevent oil fom entering Belmont Slough.									
	. 2	Belmont Slough				6000 TBB						2/3 **16**
		8	Protective booming of bayfront tidal marsh									
2-363	. 1	Steinberger Slough		3500		500 TBB		2/1	1	SPS	Bboat: very shallow draft	**10-15**
		5	Exclude oil from entering/leaving Steinberger Slough									
2-364	. 1	Bair Island			200		200	1/1			very shallow Bboat	**5**
		5	Exclude oil from entering Bair Island: close openings to interior.									
	. 2	Bair Island				4000 TBB		2/1			Very shallow water Bboat	
		8	Protective booming of exposed marsh frontage.									
2-365	. 1	Redwood Creek		3000	8000	4000 TBB	2000	6/3	1	sfs	very shallow Bboats	**25-30**
		7,8	Deflect past, Deflect to collection, Protective boom shoreline.									
2-366	. 1	Corkscrew Slough			2000		2000	2/0			very shallow Bboats	**3-6**
		5	Exclude oil from entering Slough.									
2-367	. 1	Greco Island/Ravenswood Slough		8000	2000	10000TBB	2000	6/10	0		very shallow Bboats	**35-45**
		5,8	exclude oil from entering various sloughs, protective booming of bay frontage.									

PROBABILITY OF OIL REACHING EACH SITE STRATEGY IN GRP 3

GRP 3



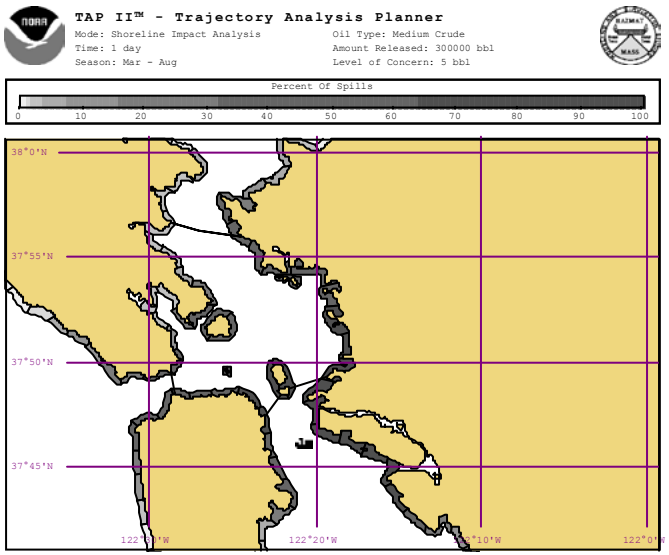
6 hours from start of spill



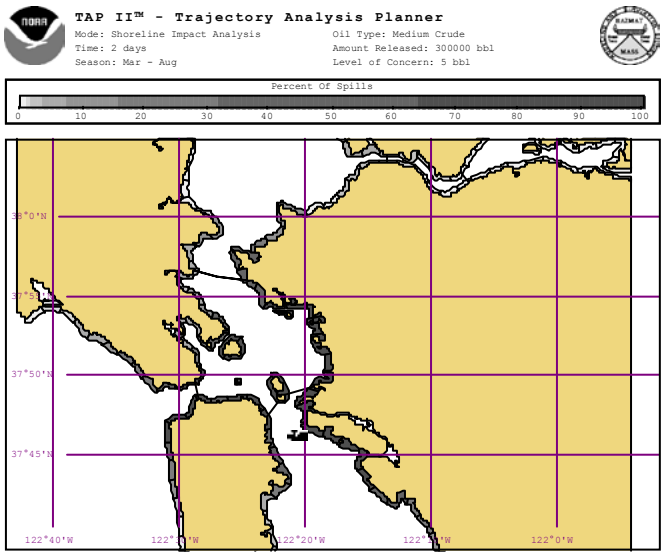
12 hours from start of spill

TAP II Maps for GRP3 Scenario: Spill of 300,000 bbls of crude at Anchorage 9 in the Spring. The shades of grey at each impacted site correspond to a percentage in the legend of the number of spill scenarios (from 500 runs of various wind, tides and currents) that brought more than 5 bbls (= Level Of Concern) of oil to that site in the specified time frame (6 hours or 12 hours).

GRP 3



24 hours from start of spill



48 hours from start of spill

TAP II Maps for GRP3 Scenario: Spill of 300,000 bbls of crude at Anchorage 9 in the Spring. The shades of grey at each impacted site correspond to a percentage in the legend of the number of spill scenarios (from 500 runs of various wind, tides and currents) that brought more than 5 bbls (= Level Of Concern) of oil to that site in the specified time frame (24 hours or 48 hours).

Table of Percent of Spills that bring oil (>5 bbls) to each site from the GRP 3 scenario.

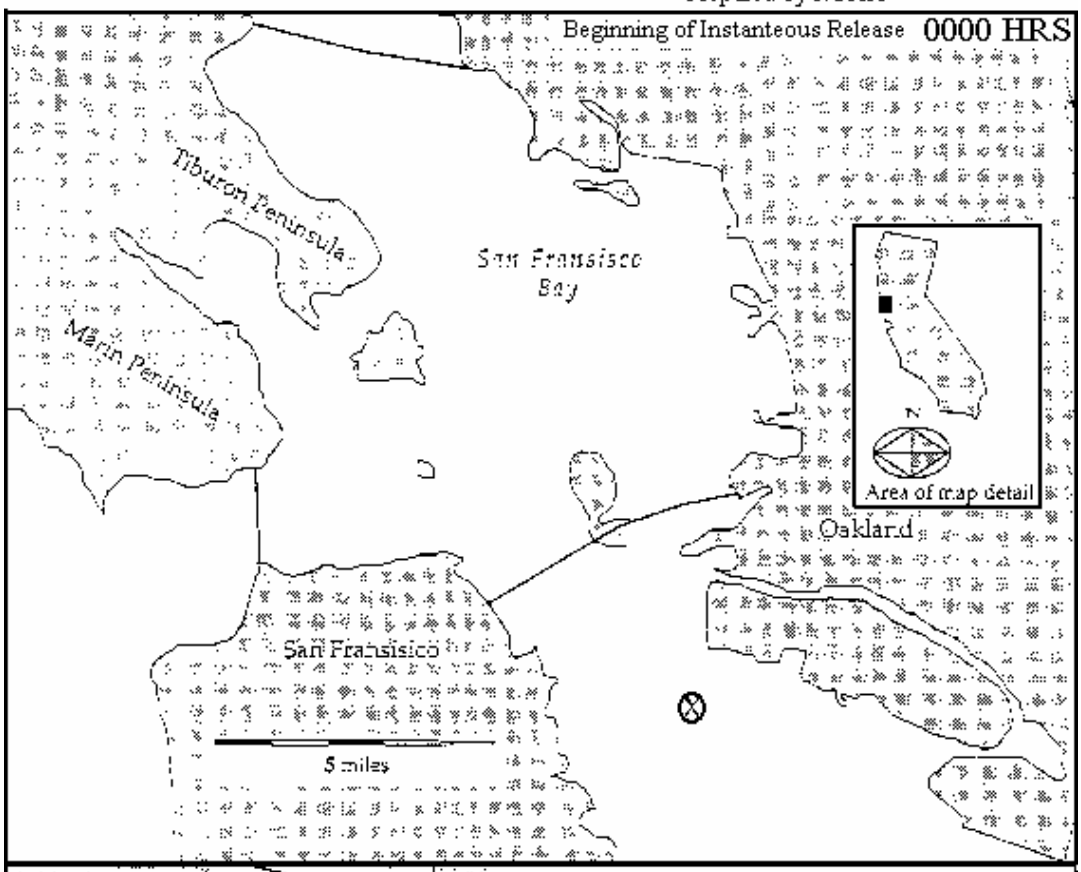
ACP SITE#	ES	SITENAME	LAT W (Deg. Min.)	LONG W (Deg. Min.)	6 HOURS (% prob)	12 HOURS (% prob)	24 HOURS (% prob)
2-351	A	Yerba Buena Island	37 48	122 22	62	86	95
2-353	B/A	Herron's Head Park - India Basin	37 44.3	122 22.5	47	54	58
2-354	B/A	Islais Creek - Pier 94 Saltmarsh	37 44.3	122 22.5	46	54	56
2-400	C	San Francisco Waterfront	37 46	122 23	45	61	69
2-402	B	Alcatraz Island	37 50	122 25	38	56	76
2-302	C	Alameda Eelgrass Beds	37 45	122 16	35	79	95
2-402	B	Alcatraz Island	37 50	122 25	35	53	75
2-458	A	Emeryville Lagoon/Mudflats	37 50	122 29	27	66	86
2-352	B	South Basin, Hunters Point	37 43	122 23	24	27	29
2-151	C	Pt. Doable to Lime Point	37 49	122 30	22	32	55
2-401	B	Pier 39	37 48	122 22	19	40	57
2-153	A	Land's End	37 47	122 30	19	28	51
2-154	A	Cliff House and Seal Rocks	37 47	122 31	15	23	44
2-303	A	San Leandro Bay	37 45	122 13	12	51	82
2-423	C	Angel Island	37 54	122 27	12	34	60
2-304	C	Bay Farm Island Eelgrass Beds	37 44	122 15.5	11	36	64
2-457	A	Berkeley Eelgrass Beds	37 51	122 19	8.6	29	73
2-150	C	Point Bonita and Bonita Cove	37 49	122 31	7.6	16	26
2-148	A	Rodeo Lagoon	37 50	122 32	6	12	22
2-149	A	Bird Island	37 49	122 32	6	12	22
2-155	A	Ocean Beach/Fort Funston	37 45	122 30	4.6	12	23
2-305	A	San Lorenzo Creek to Johnson Landing	37 29	122 02	0.4	3.6	21
2-422	B	Keil Cove	37 55	122 27	0.04	15	24
2-421	C	Tiburon Peninsula	37 54	122 27	0.01	22	37
2-420	A	Richardson Bay Marshes	36 56	122 30	0.01	4.6	10
2-420	A	Richardson Bay Marshes	36 56	122 30	0.01	19	29

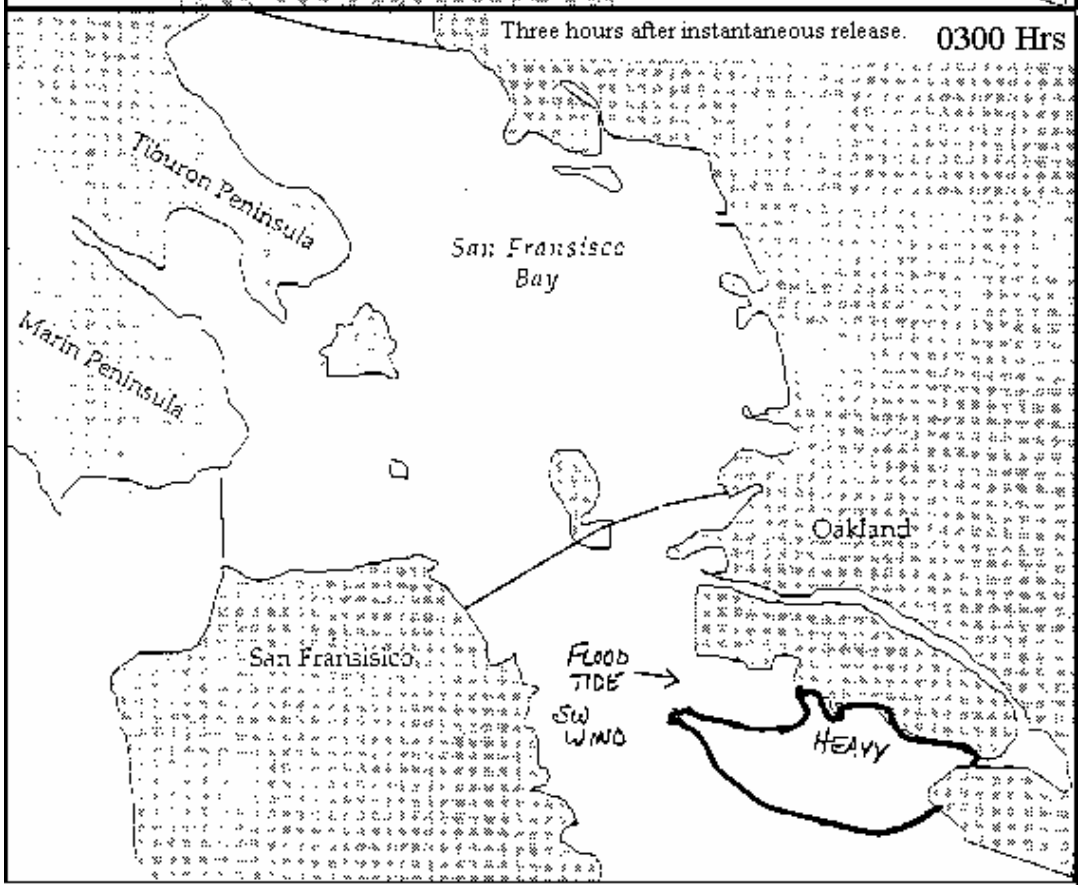
2-456	A	Albany Marsh	37 54	122 19		9.4	53
2-453	A	Brook's Island	37 54	122 21.5		21	55
2-455	C	Santa Fe Channel	37 55	122 22		17	48
2-451	A	Castro Rocks	37 50	122 24		17	43
2-452	A	Richmond Eelgrass Beds	37 58	122 24		15	37
2-424	B	Paradise Cove	37 54	122 27		15	24
2-501	A	Castro Creek and Marshes	37 58	122 24		11	28
2-454	A	Richmond Inner Harbor/Hoffman Marsh	37 54.5	122 20		4.4	38
2-506	A	San Pablo Bay Eelgrass Bed	37 59	122 25		2.8	6.8
2-551	A	McNear's Beach Marshes	38 00	122 27		2.8	6.8
2-427	A	Marin Islands	37 58	122 28		1.6	3.6
2-502	A	San Pablo Creek Marshes	37 58.5	122 23			4.2
2-503	A	Pinole Pt. Marshes-South	37 59	122 21.6			4
2-504	A	Pinole Pt. Marshes - North	38 05	122 21			2.6
2-425	A	Corte Madera Marshes	38 56	122 30			1.8
2-426	A	San Rafael Creek Marsh	37 58	122 29			1.8
2-583	A	Napa River Marshes	38 12	122 19			0.4
2-156	A	Thornton Beach State Park	37 42	122 30			0.2

Anchorage No. 9 Spill Scenario Map

12,000 Barrels of Alaska North Slope Crude

Use Only as a General Reference.
Oil may move beyond map boundaries.
Prepared by NOAA





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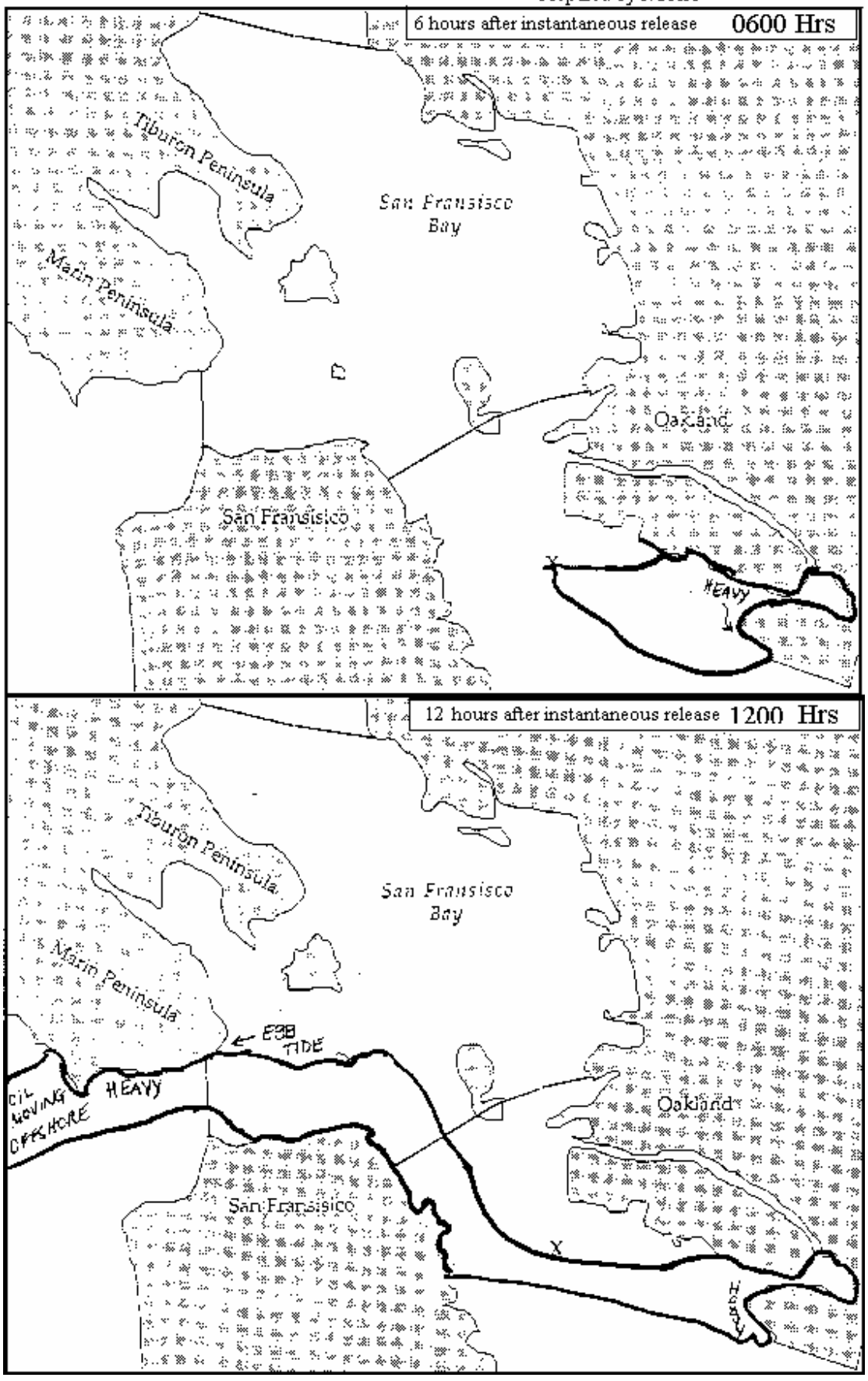

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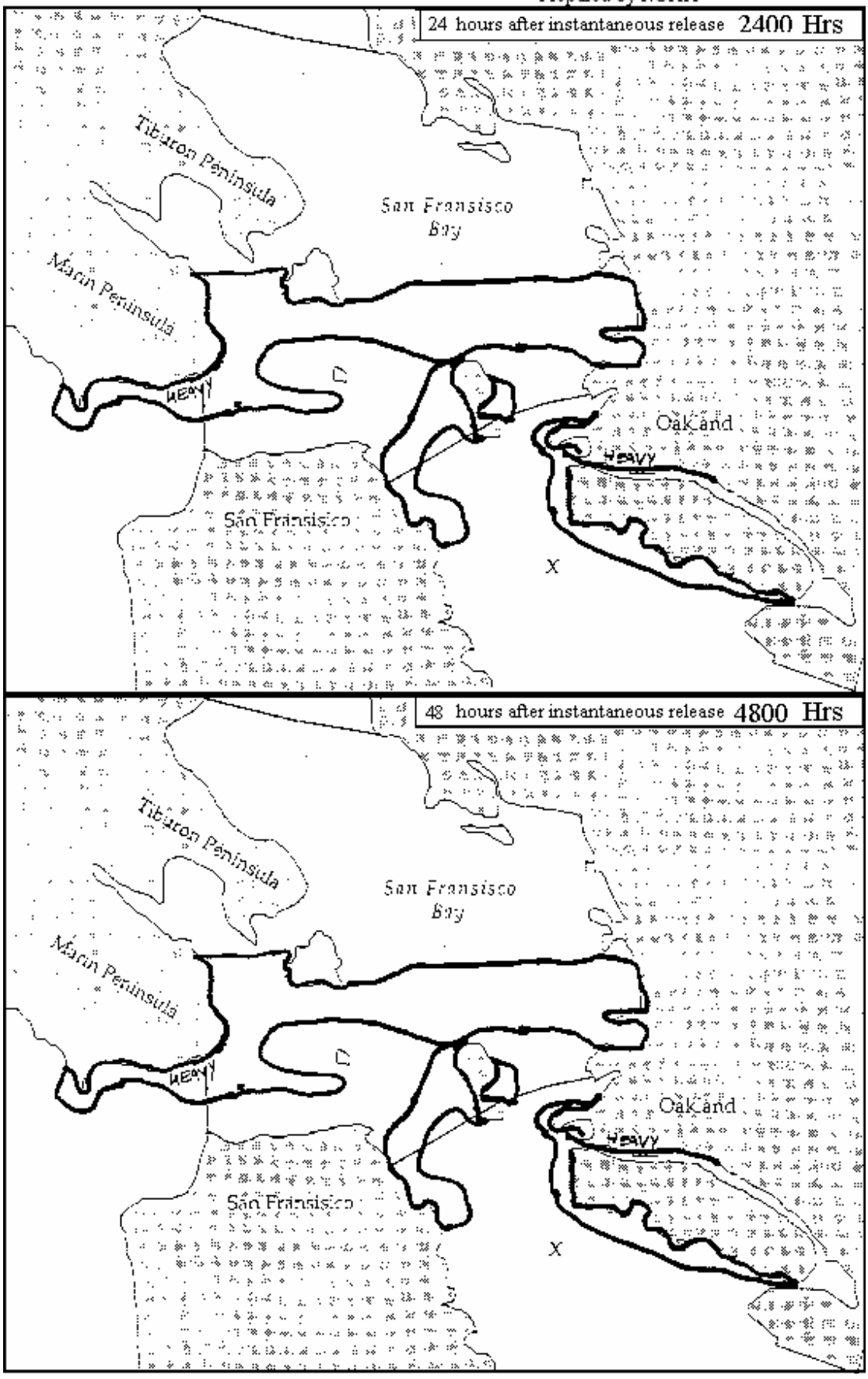

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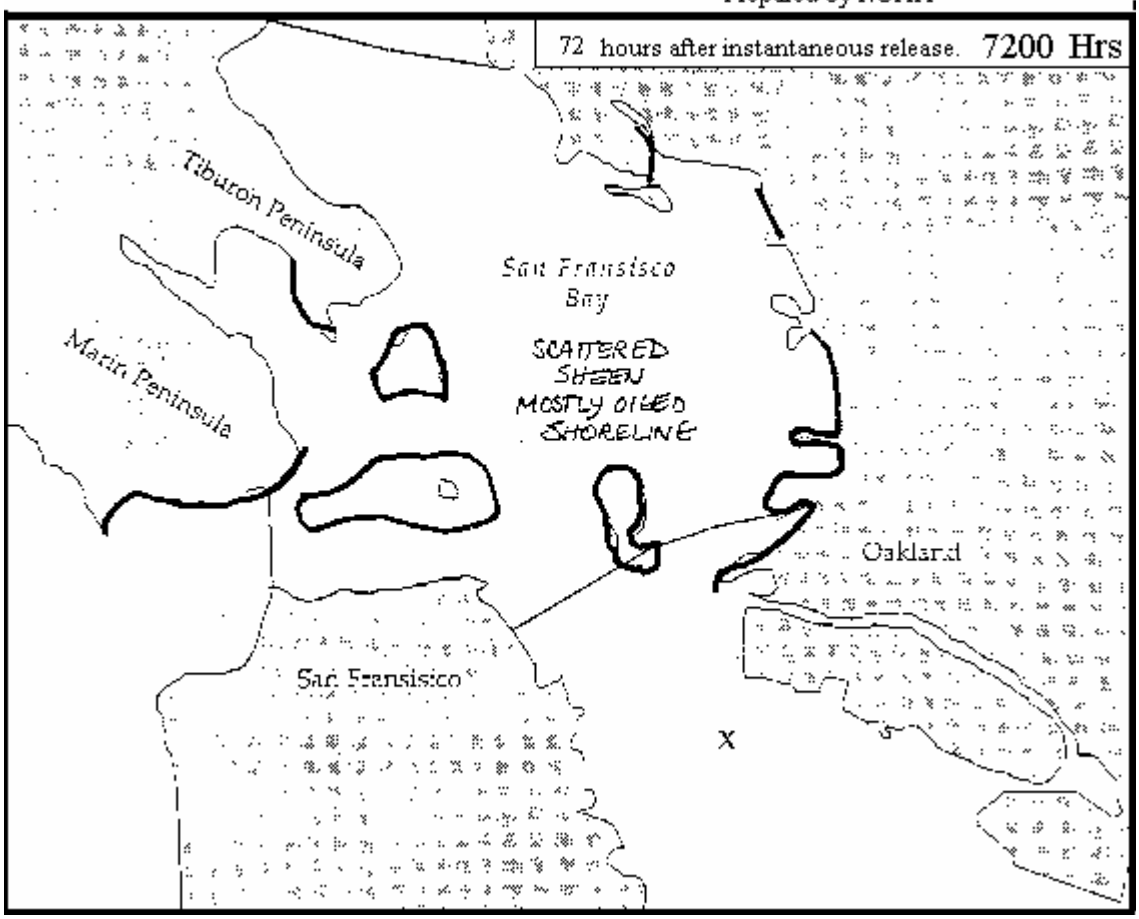

RESPONSE PRIORITIES FOR ANCHORAGE 9 SCENARIO* GRP 3

TIDE AND WIND AT TIME OF INSTANEOUS DISCHARGE	TIME PERIOD OILED (HOURS)	PRIORITY	SITE ID 1996	SITE ID 1998	SITE DESCRIPTION
WINTER SCENARIO	0.00	1			Spill Site Containment
12,000 bbl ANS Crude	0.00	2			On-Water Recovery
Max flood	0-3	3	234	302	Alameda Eelgrass Beds
Wind: 20+ kts. SW to W	3-6	4	235	303	San Leandro Bay
Runoff Unknown	6-12	5	254	352	South Basin, Hunters Point
	6-12	6	256	401	Pier 39
	6-12	7	257	402	Alcatraz Island
	6-12	8	049	151	Point Diablo to Lime Pt.
	6-12	9	048	150	Point Bonita and Cove
	6-12	10	047	149	Bird Island
	6-12	11	046	148	Rodeo Lagoon
	12-24	12	255	351	Yerba Buena Island
	12-24	13	232	458	Emeryville Lagoon/Mudflats
	12-24	14	233	457	Berkeley Eelgrass Beds
	24-48	15	045	147	Redwood Creek/Big Lagoon/ Muir Beach
	24-48	16	201	420	Richardson Bay Marshes
	24-48	17	260	456	Albany Marsh
	24-48	18	228	454	Richmond Inner Harbor/ Hoffman Marsh
	24-48	19	261	453	Brooks Island

* Based on the 1995 ACP trajectory

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Alameda Eelgrass Beds - Site Summary 2-302 - C/A

County:	Alameda	**GRP**	**Latitude**	37 45	**N**	**Longitude**	122 16	**W**
USGS:	Oakland West	**OSPR Map:**				**Last ACP Update**	10/1/2002	

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
The bed extends from near the entrance to Ballena Bay to the southerly extension of Park Street in Alameda. The eelgrass beds south of the island of Alameda total about 30 acres. The densest portion of the bed is near Ballena Bay and becomes more sparse along a sand bar running to the east about 150 yards off shore. The beds are in 8 to 10 feet of water and would not necessarily be exposed to oil on all low low tides.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
This eelgrass bed has A-level protection priority when exposed. Herring spawning in eelgrass November through April.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
Oil readily sticks to eelgrass. The beds are an important spawning substrate for herring from November through April, and eelgrass is the sole food source for black brant during this time.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College (707) 664-0880) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B		Golden Gate Raptor Observatory	(650) 331-0730	
B	Deborah Bartens	Baylands Nature Preserve	(415) 329-2506	
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	
L	Dispatch EBRP	East Bay Regional Park District	(510) 792-0222	
B/T	Mike Josselyn	National Marine Fisheries Service, Tiburon	(415) 454-8868	
B/T	Diane Watters	Calif Dept of Fish and Game	(650) 688-6357	

2-302 - C/A Alameda Eelgrass Beds - Site Strategy

County Alameda **NOAA CHART:** 18649/18650 Entrance to SF Bay

Latitude		Longitude	
37 45	N	122 16	W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
The bed extends from near the entrance to Ballena Bay to the southerly extension of Park Street in Alameda.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Water is relatively shallow.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts

The concern is that oil will readily stick to any eelgrass blades which come in contact with the oil. The oil is disruptive to the eelgrass and would be damaging to any herring eggs spawned during the herring spawning season November to April. The strategy is to deflect the oil past this area to currents leading to collection setup to the east in San Leandro Channel.

SITE STRATEGIES

Strategy 2-302.1

(USCG Strategic Objective: **7**) **Dates:** **SISRS** 5/18/1999 **Approved** **last tested** **ACP date** 10/1/2002

Objective or Prevention
Deflect oil past eelgrass bed and toward collection / protection deployments of San Leandro Channel.

Technique Details **Check here means ( ) " No strategy diagram" ( ) "Contact CCC"**
Cascade 3,000 ft. (6 x 500 ft.) of harbor boom from the mouth of Ballena Bay at a southeasterly angle to direct oil past the eelgrass beds and the southern side of Alameda Island toward currents leading to the San Leandro Channel.

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type	Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-302.1	3000			12 12/22+/danforth		2	0			6	twice daily	7

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
This site is accessible only by water. The beds are about 200 yards from Alameda marina mouth. To drive to the nearest beach, follow the signs to Alameda from I-880. Exit on Webster and continue to the terminus of Webster at Crown Beach: right (west) on Central to 4th street to Ballena Bay and Ballena Isle Marina or left to 8th street which becomes Shore Line Drive.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
Ready access to the nearby shoreline.

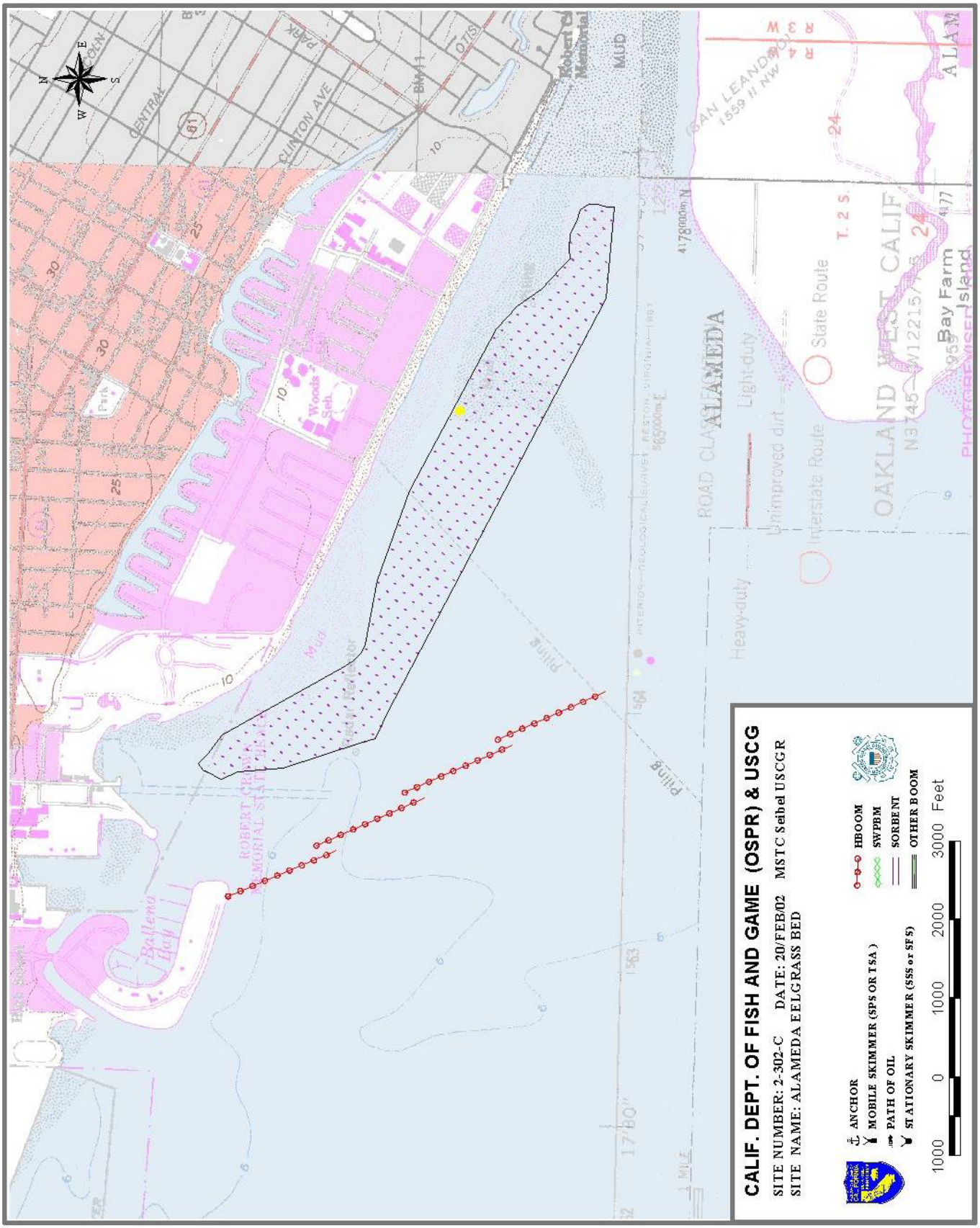
WATER LOGISTICS:

Access limitations: depth, obstructions:	None known.
Boat Launching, Loading, Docking and Services Available:	Public launching at the end of Lincoln off of Central. Docking available at Ballena Isle Marina just to the west.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
The nearby Ballena Isle Marina is the most convenient boat facility to support this operation. Crown Beach (EBRP) may be useful for staging. The Alameda Ferry Slip on Bay Farm Island to the south is also a good site to stage boom and support equipment. Also, San Leandro Harbor, just south of the Oakland Airport is a small boat harbor accommodating 500 boats with a minimum of 15 guest slips. The channel leading into the harbor is dredged and has a controlling depth of 5-6 ft. It is marked by day beacons and two lights, and the northernmost light has a fog signal. There is a yacht club and the harbor master's office is on the southwest side.

COMMUNICATIONS LIMITATIONS / PROBLEMS No Problems Radio Pager Cell phone

ADDITIONAL


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-302-C DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: ALAMEDA EELGRASS BED
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
1000 0 1000 2000 3000 Feet
ALAMEDA
OAKLAND WEST CALIF
Bay Farm Island
Ballena Bay
Woods Sch.
Park
MUD
CLINTON AVE
CENTRAL
PARK
OTIS
State Route
Interstate Route
Light-duty
Unimproved dirt
Heavy-duty

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San Leandro Bay - Site Summary 2-303 - A

County: Alameda **GRP** **Latitude** 37 45 N **Longitude** 122 13 W
USGS: Oakland East, Hunters Point, San Leandro **OSPR Map:** **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
This site includes all of San Leandro Bay and the San Leandro Channel, including Elsie Roemer Bird Sanctuary located at the southeast end of Crown Beach on Alameda, west of the Alameda-Bay Farm Island Bridge. This shallow bay between Alameda and Bay Farm Islands has extensive mudflats and well developed saltmarsh, including the 50-acre Arrowhead Marsh at the south end. The west and south margins are part of San Leandro Bay Regional Shoreline - EBRP. The Oakland Estuary feeds into the north end, and San Leandro Channel feeds in from the west. San Leandro Creek empties to the bay at its southeast corner. The Airport Marina is along the southwest margin.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
The saltmarshes, mudflats, and bird sanctuary are an "A" priority all year. Several Special Status Species including the endangered California clapper rail, the endangered salt marsh harvest mouse, and rare sensitive plants are present in the 50-acre Arrowhead Marsh.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
The main habitat of concern is the 50-acre Arrowhead Marsh. There are also cordgrass marshes along the margins. There are extensive mudflats. The gravelly substrate along the southwest margin supports extensive cockle beds. All these habitats are very sensitive to oiling and cleanup is very impractical.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)
All of the marshes, mudflats, and shallow water areas within San Leandro Bay are habitat for waterfowl, wading birds, and shorebirds, and the Elsie Roemer Bird Sanctuary is located at the southeast end of Crown Beach on Alameda, west of the Alameda-Bay Farm Island bridge. The endangered California clapper rail breeds here. Brown pelican and least tern forage here.
The endangered saltmarsh harvest mouse also populates these marshes.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
There are probably historic and cultural sites present. Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College (707) 664-0880) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
ELO	Dispatch EBRP	East Bay Regional Park District	(510) 792-0222	

2-303 - A San Leandro Bay - Site Strategy

County Alameda **NOAA CHART:** 18649/18650 Entrance to SF Bay

Latitude 37 45 N Longitude 122 13 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site includes all of San Leandro Bay and the San Leandro Channel, including Elsie Roemer Bird Sanctuary located at the southeast end of Crown Beach on Alameda, west of the Alameda-Bay Farm Island Bridge.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Beware of shallows.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, or sediments, burial, organism burrows, tidal channel spreading, watertable limitations,
The main concerns are the very sensitive marshes and mudflats here, which are almost impossible to cleanup. The intention is to prevent oil from entering the marshes by diverting it to collection sites on the north shore of Bay Farm Island near the bridge. Avoid disturbing or trampling marsh vegetation and don't trample oil into the mud.

SITE STRATEGIES

Strategy 2-303.1

(USCG Strategic Objective: **5,6**) **Dates:** SISRS 7/1/1997 Approved last tested 2/1/1998 ACP date 10/1/2002

Objective or Prevention
Direct oil away from Alameda shore to shoreside collection at north shore of Alameda-Bay Farm Island Bridge.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"
Deploy deflection boom across San Leandro Channel using both intertidal barrier boom and harbor boom to move oil to collection areas and exclude oil from San Leandro Bay marshes.

Flood tide - Using 1200 ft. of harbor boom and 250 ft of intertidal barrier boom (or swamp boom) connected together, place boom across channel at approximately a 45 degree angle. Place intertidal barrier boom on north side of channel across mudflat, extending harbor boom across channel to form a collection pocket on south side of channel at inlet next to the Alameda-Bay Farm Island bridge.
Ebb Tide:- If little to no oil is inside San Leandro Bay; flood tide harbor boom can remain in place. If strong currents exist the boom may be opened and used to line the marshes on either side of the channel, allowing oil to move out of the bay. If a significant amount of oil is present inside the bay; leave existing flood tide harbor boom in place, collect oil on the north bank.

A secondary line of defense in the San Leandro Channel may be required. This could involve sorbent boom behind harbor boom or additional harbor boom and skimmers working near the bridge. Specific equipment requirements will be determined based on oil, current, and weather conditions during the incident.

Strategy 2-303.2

(USCG Strategic Objective: **7**) **Dates:** SISRS 7/1/1997 Approved last tested 2/1/1998 ACP date 10/1/2002

Objective or Prevention
Divert oil away from Elsie Romer Bird Sanctuary to collection in the San Leandro Channel.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"
Deploy 1500 ft. of harbor boom from the Park St. jetty on Alameda. Depending on weather and spill conditions, this boom can be used to either (a) deflect oil away from the marsh east of jetty and into channel , or (b) deflect oil to the sandy beach into a collection area. SPS skimmer in San Leandro Channel may be replaced by portable skimming head operated from shore with vac truck or other shore storage.

Strategy 2-303.3

(USCG Strategic Objective: **5**) **Dates:** SISRS 7/1/1997 Approved last tested 2/1/1998 ACP date 10/1/2002

Objective or Prevention
Exclude oil from entering San Leandro Bay via Oakland Estuary.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"
Protective measures on the north channel (Oakland Estuary) entrance to San Leandro Bay may also be necessary depending on the size and location of the spill. Spills in SF Bay should be confronted in the Oakland Inner Harbor to prevent oiling of the inner harbor and San Leandro Bay. Spills in the harbor should be confronted in the Park Street Bridge Reach. Currents in the Park Street Bridge Reach are very fast. Specific strategies have not been developed for these locations, although extensive use and deployment of several thousand feet of harbor boom, boom boats, skimmers and vacuum trucks may be required. Diagonal booming will be necessary to move oil out of swift water to slower shoreside collection pockets and eddies.

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type		Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-303.1	1200	250	250	TBB	5 5/22+/daforth & chain	200	2	1	1 port	Bboat: very shallow draft	39	2	5,
2-303.2	1500				4 4/22+/danforth		2	1	1 SPS		8	shore resupport	7
2-303.3	3000				10 10/22+/danforth & chain	100	2	1	1 SPS				5

LOGISTICS

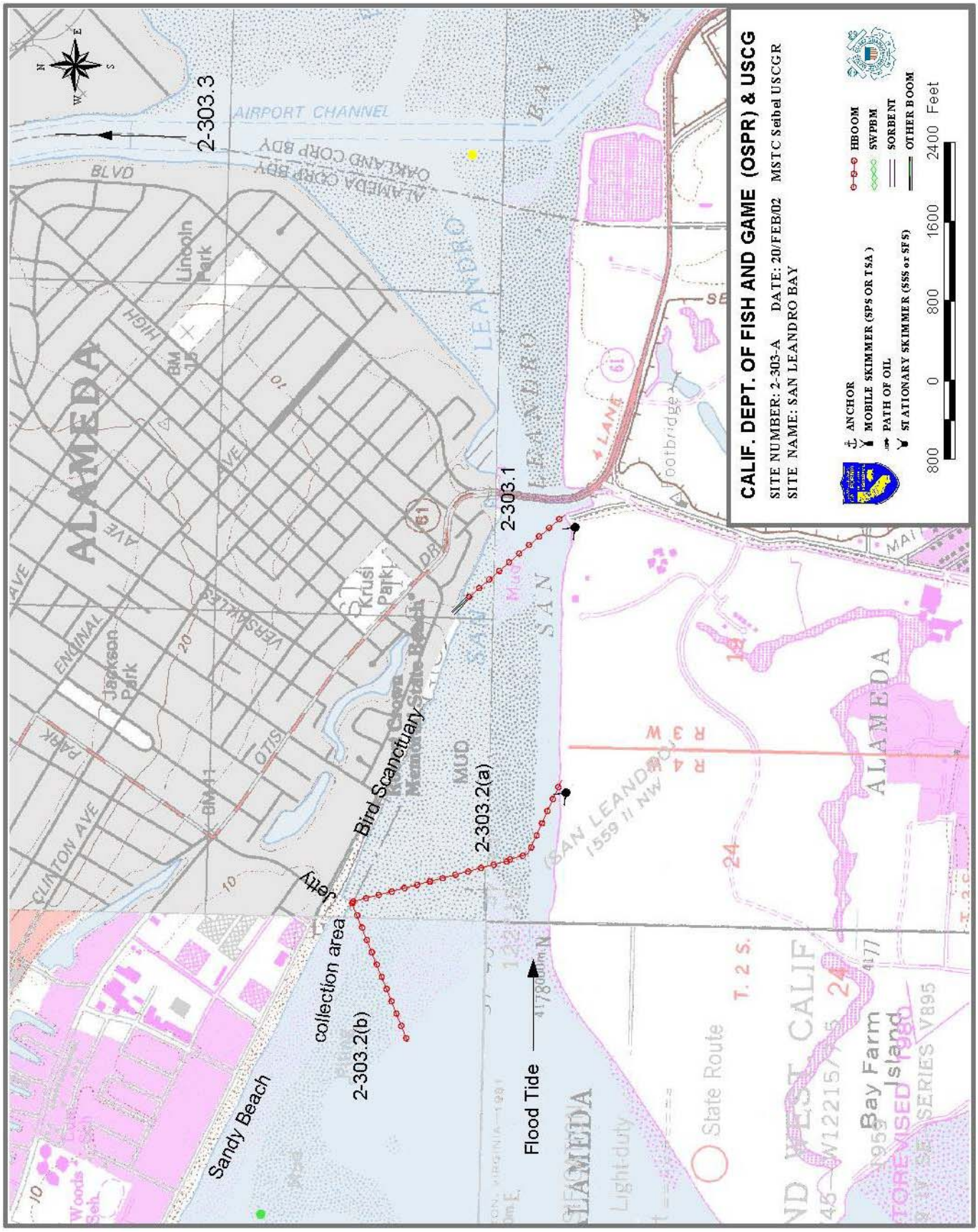
DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
By vehicle, exit I-880 at Hegenberger Rd and proceed bayward (toward airport). Turn right (north) on Doolittle Dr (Hwy 61) which runs along the west side of San Leandro Bay and crosses the San Leandro Channel. By boat, from the tip of Alameda Island, the bay is at the east end of the Island and may be approached via the Oakland Estuary or, preferably on the south side of the island, via the San Leandro Channel.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates) Good on west shore.

WATER LOGISTICS:
Access limitations: depth, obstructions: Exceedingly shallow.
Boat Launching, Loading, Docking: and Services Available: There are launches in Oakland Estuary and at the southwest of Alameda Island at the end of Lincoln St. All services in Oakland Estuary.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Good staging at the foot of Alameda-Bay Farm Island Bridge. Also at Crown Park, San Leandro Regional Shoreline, and Bay Farm Ferry Landing. Field Post at USCG, Alameda. Foss Environmental HQ is at the west end of Alameda.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-303-A DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: SAN LEANDRO BAY
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
800 0 800 1600 2400 Feet
2-303.3
2-303.1
2-303.2(a)
2-303.2(b)
Bird Sanctuary
collection area
Flood Tide
Sandy Beach
ALAMEDA
AIRPORT CHANNEL
SAN LEANDRO BAY
Lincoln Park
Jackson Park
Krusi Park
Footbridge
Bay Farm Island
State Route

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Bay Farm Island Eelgrass Beds - Site Summary 2-304 - C/A

County: Alameda **GRP** 3,4 **Latitude** 37 44 **N** **Longitude** 122 15.5 **W**
USGS: Hunters Point / San Leandro **OSPR Map:** 154 155 **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
This site extends from the tip of Bay Farm Island at San Leandro Channel (ferry landing) to the next point south. This reach is a shallow cove with a rip-rap margin and shallow water of up to 15' deep. It is a natural collection area for debris. The eelgrass beds begin about 50' off the shore and are about 200 yards long.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
This eelgrass bed has A-level protection priority when exposed. Herring spawning in eelgrass from November though April.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
The shallow cove is habitat for eelgrass and all associated species. Oil readily sticks to eelgrass. Eelgrass is a favored substrate for herring spawning November through April. It is also the sole food source for black brant during this same period.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
There are probably historic and cultural sites present. For specific information on historic or cultural resources in this area, contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center (Leigh Jordan, Sonoma State College (707) 664-2494).

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
ELBO	City of Alameda, Parks	Dept Parks and Recreation	(510) 748-4565	
EL	City of Alameda, PD	Alameda Police -non emergency	(510) 748-4508	
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	
O	Steve Chappell	Suisun Resource Conservation Dist	(707) 425-9302	(707) 425-4402
TB	Mike Josselyn	National Marine Fisheries Service, Tiburon	(415) 454-8868	
B	Office	National Marine Fisheries Service	(415) 435-3149	
TB	Diane Watters	Calif Dept of Fish and Game	(650) 688-6357	

2-304 - C/A Bay Farm Island Eelgrass Beds - Site Strategy

County Alameda **NOAA CHART:** 18649/18650 Entrance to SF Bay

Latitude		Longitude	
3 7 44	N	122 15.5	W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site extends from the tip of Bay Farm Island at San Leandro Channel (ferry landing) to the next point south.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Riprap poses slip, trip and fall hazards. Vessels beware of shallows at margins.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes, or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts.

Primary concern is oiling of eelgrass and its impacts on wildlife. This is a natural collection area for flotsam and can function as an effective oil collection site. Oil may become imbedded in the riprap.

SITE STRATEGIES

Strategy 2-304.1

(USCG Strategic Objective: **7**) **Dates:** SISRS 10/5/1997 Approved last tested 10/5/1997 ACP date 10/1/2002

Objective or Prevention

Divert oil from moving into the area on currents by positioning a deflection boom from the runway point to diver oil borne on currents past.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"

This strategy is most appropriate if very low tides are likely to expose eelgrass. Deploy 1000 ft. (8x8+) harbor boom from the point at the end of the runway parallel to the shoreline to deflect oil past the pocket of the cove. This strategy will require heavy anchoring since current is very strong (2+knt at point); previous deployment attempts have failed if not properly anchored.

Strategy 2-304.2

(USCG Strategic Objective: **6**) **Dates:** SISRS 10/5/1997 Approved last tested 10/5/1997 ACP date 10/1/2002

Objective or Prevention

Deflect oil to collection at shore.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"

a) For ebb tide: deploy 1000 ft. (8X8+) harbor boom at an angle to direct oil to shore about 200 ft. south of ferry landing. Complete with a lined capture and hold pocket of 2000 ft. (4X4+) swamp boom. Line shore with 2000 ft. (4X4+) swamp boom and/or sorbent boom to keep oil from imbedding in riprap. Deploy additional 1000 ft. (8x8+) harbor boom to cascade oil into collection.

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type	Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-304.1	1000			6 6/22#+ danforths/ 15'+ chain		1	1			4	continuous	7
2-304.2	2000	4000		9 9/22#+/danforth & chain + stakes	2000	2	2	1 port		8	continuous	6

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Land access is from I-880: exit at High St, continue south (left) on Doolittle across San Leandro Bay and then continue right (west) on Mecartney Rd bay front, Shoreline Park. By water the site is about a mile southeast from the marina at Robert Crown State Beach.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
All.

WATER LOGISTICS:

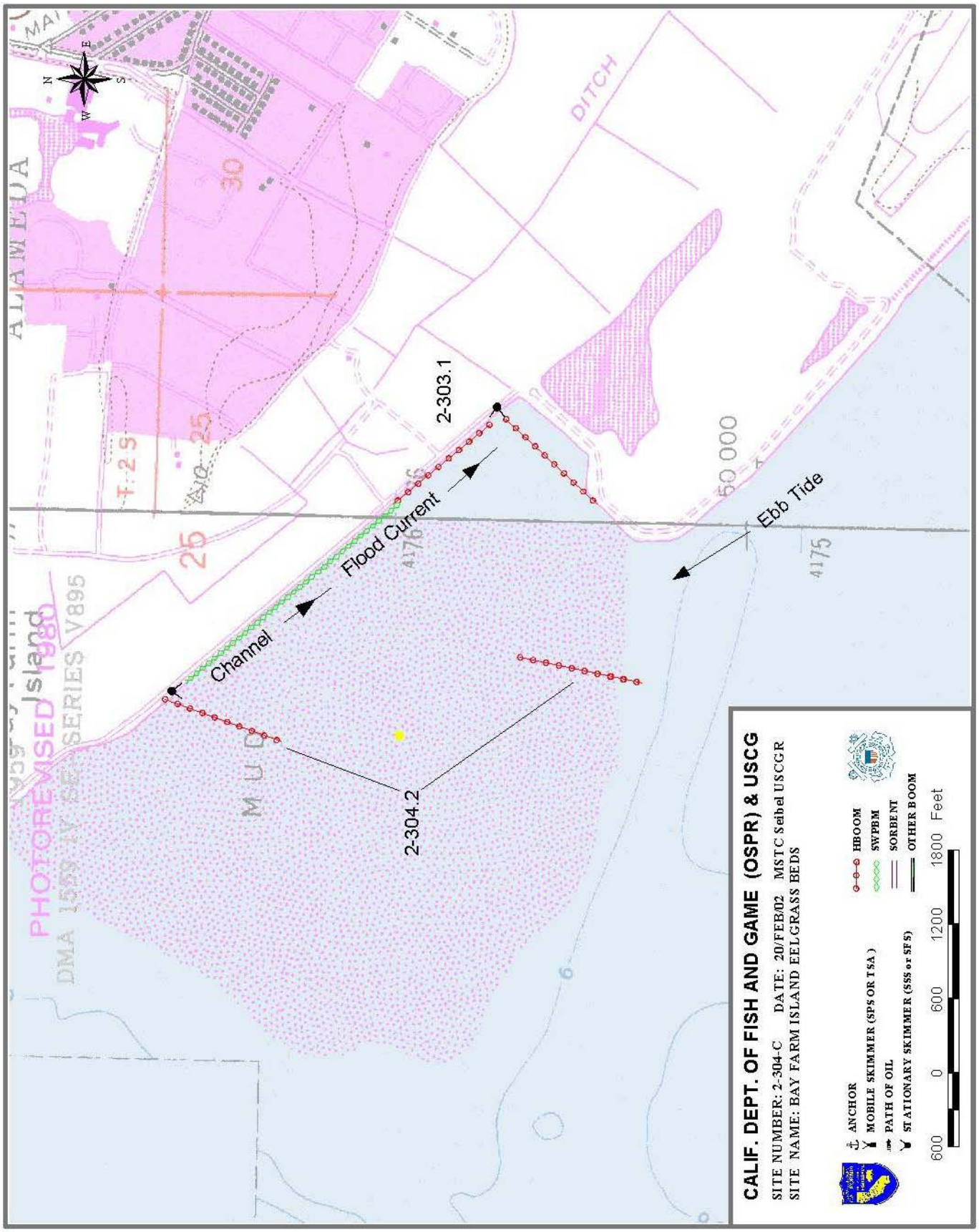
Access limitations: depth, obstructions: Beware of shallows at margins.

Boat Launching, Loading, Docking and Services Available: Launch and moorage across at Ballena Isle Marina, Alameda.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Shoreline Park and Crown Beach can provide local field support and deployment sites. EBRP facilities at Crown Beach, Alameda may serve well as a field post.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


ALAMEDA
DITCH
T. 2 S.
30
25
26
2-303.1
2-304.2
Flood Current
Ebb Tide
Channel
4176
4175
60 000
PHOTOREVISED 1980
DMA 1559 IV SERIES V896
CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-304-C DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: BAY FARM ISLAND EELGRASS BEDS
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
600 0 600 1200 1800 Feet

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San Lorenzo Creek to Johnson Landing - Site Summary 2-305 - A

County: Alameda **GRP** 3 **Latitude** 37 29.0 **N** **Longitude** 122 02 **W**
USGS: San Leandro **OSPR Map:** 158-160 **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
A large contiguous section of marsh located along the east side of south San Francisco Bay and bounded on the northwest by the San Leandro Marina, the northeast by the Southern Pacific Railroad, on the southeast by Highway 92 and on the southwest by San Francisco Bay. The site consists of a series of four separate salt marshes running three miles along the east bay shoreline from the mouth of San Lorenzo Creek to Johnson Landing. The largest of these and highest priority is approximately 200 acres and located just north of Johnson Landing. It is partially protected by levees with two openings to the Bay of 1000 and 500 feet in length. The other three smaller marshes are not protected by any levees.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
The site is an "A" priority all year.

RESOURCES AT RISK
HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
The endangered salt marsh harvest mouse and California least tern are known to occur in the area. The California clapper rail may occur in the marshes. The area is heavily used by migratory waterfowl.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Ohlone cultural sites may be nearby. Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison -(916) 653-9125), and the Northwest Information Center (Leigh Jordan, Sonoma State College (707) 664-0880), for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Deborah Bartens	Baylands Nature Preserve	(415) 329-2506	
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	
B	Joseph Didonato	East Bay Regional Park District	(510) 635-0135	
	Dispatch EBRP	East Bay Regional Park District	(510) 792-0222	
B/T	Mike Josselyn	National Marine Fisheries Service, Tiburon	(415) 454-8868	
E	Mark Taylor	East Bay Regional Park District	(510) 783-1066	

2-305 - A San Lorenzo Creek to Johnson Landing - Site Strategy

Count Alameda **NOAA CHART:** San Francisco Bay, Southern Part **Latitude** 37 29.0 N **Longitude** 12202 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
A large contiguous section of marsh located along the east side of south San Francisco Bay and bounded on the northwest by the San Leandro Marina, the northeast by the Southern Pacific Railroad, on the southeast by Highway 92 and on the southwest by San Francisco Bay.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Shallow water, Seas to 3 feet. Soft mud.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts
The main concerns are the very sensitive marshes and mudflats here, which are almost impossible to cleanup. The intention is to prevent oil from entering the marshes. Avoid disturbing or trampling marsh vegetation and don't trample oil into the mud.

SITE STRATEGIES

Strategy 2-305.1

(USCG Strategic Objective: **5**) **Dates:** **SISRS** 3/1/1995 **Approved** **last tested** **ACP date** 10/1/2002

Objective or Prevention
Exclude oil from entering the marsh. Should oil enter the marsh, contain oil to the smallest possible area of marsh.

Technique Details **Check here means ( ) " No strategy diagram" ( ) "Contact CCC"**

a. Deploy 600 ft. of harbor boom having a minimum freeboard of 4 inches and a minimum draft of 4 inches in the tidal channel on the north side of Oyster Bay Regional Shoreline. Deliver the boom by truck. A john boat and 4 people will be needed to deploy the boom. Access is through the San Leandro Sewage Treatment Plant at the end of Davis Street. A skimmer and portable storage device may be located here if significant quantities of oil can be accumulated.
b. Deploy 3,000 ft. of harbor boom from west side of Oyster Bay Regional Shoreline to Oakland International Airport near the southeast end of the runway. This will require a shallow draft boom boat.
c. Deploy 600 ft. of harbor boom across the mouth of the salt marsh at the southeast corner of Oyster Bay Regional Shoreline, and another 2,000 ft. of harbor boom from the southernmost point of Oyster Bay Regional Shoreline to Mulford landing near the intersection of Marina Blvd. and North Dike Rd. One boom boat, two john boats and 6 people will be needed at this site. Angle of boom may be altered to take advantage of wind. Divert oil to an accessible shoreline. A portable skimmer and a vac truck will be needed to recover oil as it accumulates.
d. Deploy 6,000 ft. of harbor boom around the delta formed at the mouth of San Lorenzo Creek. This may require as many as 10 john boats and 50 people. The delta is littered with large pieces of driftwood that pose a potential hazard to boats and boom. This is a potential site to test the usefulness of a hovercraft.
e. Deploy 200 ft. of swamp boom in the mouth of Bockman Channel. This can be accomplished with 1 john boat and 4 people. The boom can be delivered by truck. A portable skimmer and a vac truck will be needed to recover oil if sufficient volume accumulates.
f. Deploy 600 ft. of swamp boom at a steep angle across Sulfur Creek. Deploy the boom east of bridge at mouth of creek. Use 2 john boats and 6 people to deploy the boom. A vac truck may be located here if significant quantities of oil can be accumulated.
g. Deploy 1,500 ft. of harbor boom from the point of land extending into the bay at Hayward Landing to the shoreline to the north to protect the pickleweed marsh north of the point. Use 4 john boats and 12 people to implement this task. There is a launch ramp on the north side of the point. Close the six 36-inch open pipes with sandbags. If the flap gates on six 48-inch pipes are stuck open, close them too with sandbags.
h. Deploy 2,000 ft. of harbor boom off the breach in the levee south of Mt. Trashmore. Deploy an additional 2,000 ft. of harbor boom from the north end of the breach to the south end of a bridge to the east. Deploy 500 ft. of sorbent boom under the bridge. Use 4 john boats and 12 people at this site. A vac truck may be located here if significant quantities of oil can be accumulated.
i. Deploy 600 ft. of harbor boom off the breach in the levee just north of Johnson's landing. Deploy another 500 ft. of harbor

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type	Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-305.1	18800	800		90 90 - 20 # w/ 20' 1/2" chain each	500	25	2	3 port	10,000' 1/2" anchor line, 5 vac trucks,	10	yes	5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Hwy 880 to Hayward. Take Winton Ave. exit. Go west on W. Winton Ave to Hayward Regional Shoreline. Launch ramp at San Leandro Marina. Take Highway 880 to San Leandro. Take Marina Blvd. exit. Go west on Marina Blvd. to San Leandro Marina.

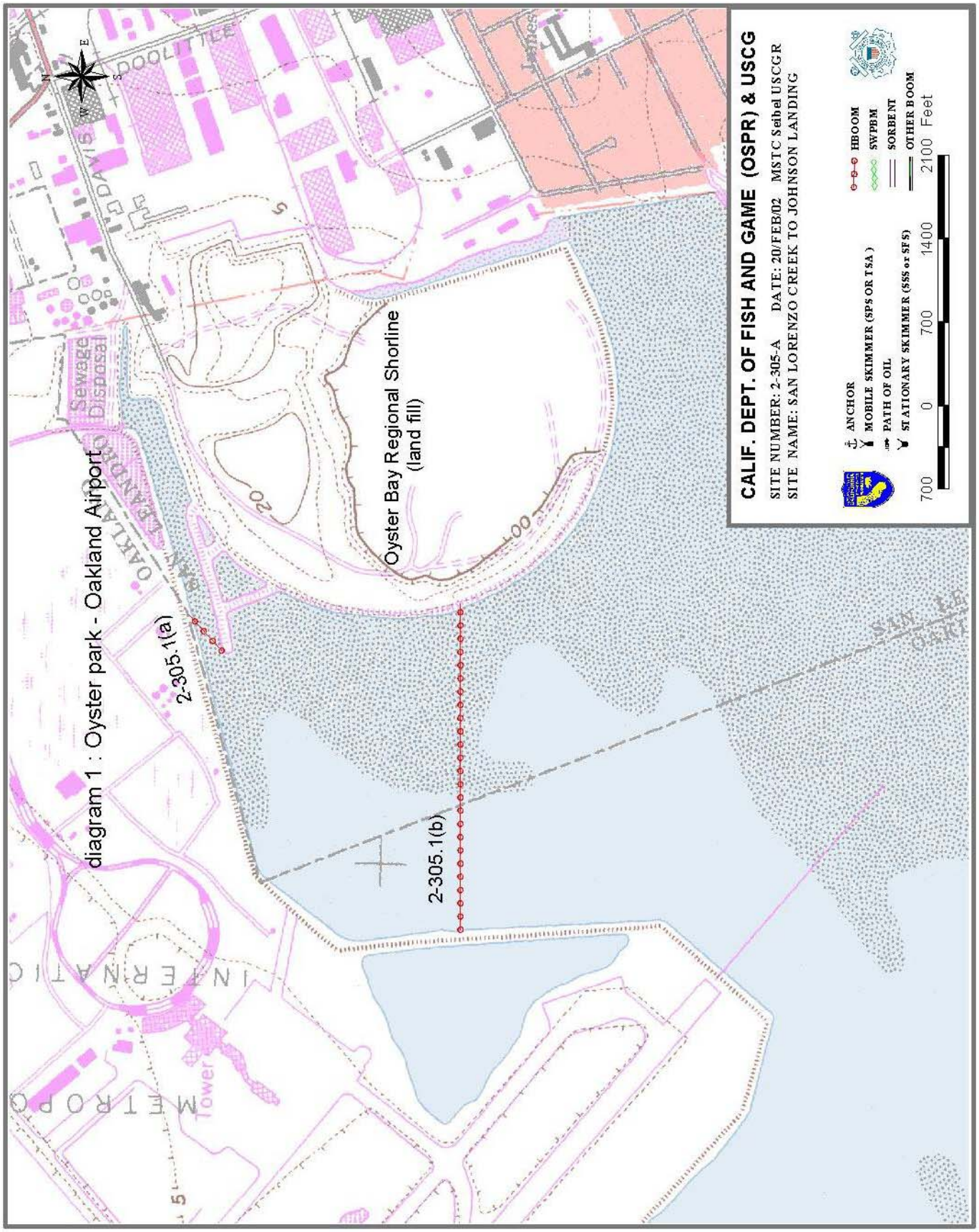
LAND ACCESS (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
Access for trucks on well maintained, graveled levee roads.

WATER LOGISTICS:
Access limitations: depth, Shallow Draft Vessels <6'.
Boat Launching, Loading, Docking and Services Boat launching available at San Leandro Marina. Small skiffs may be launched from levees.

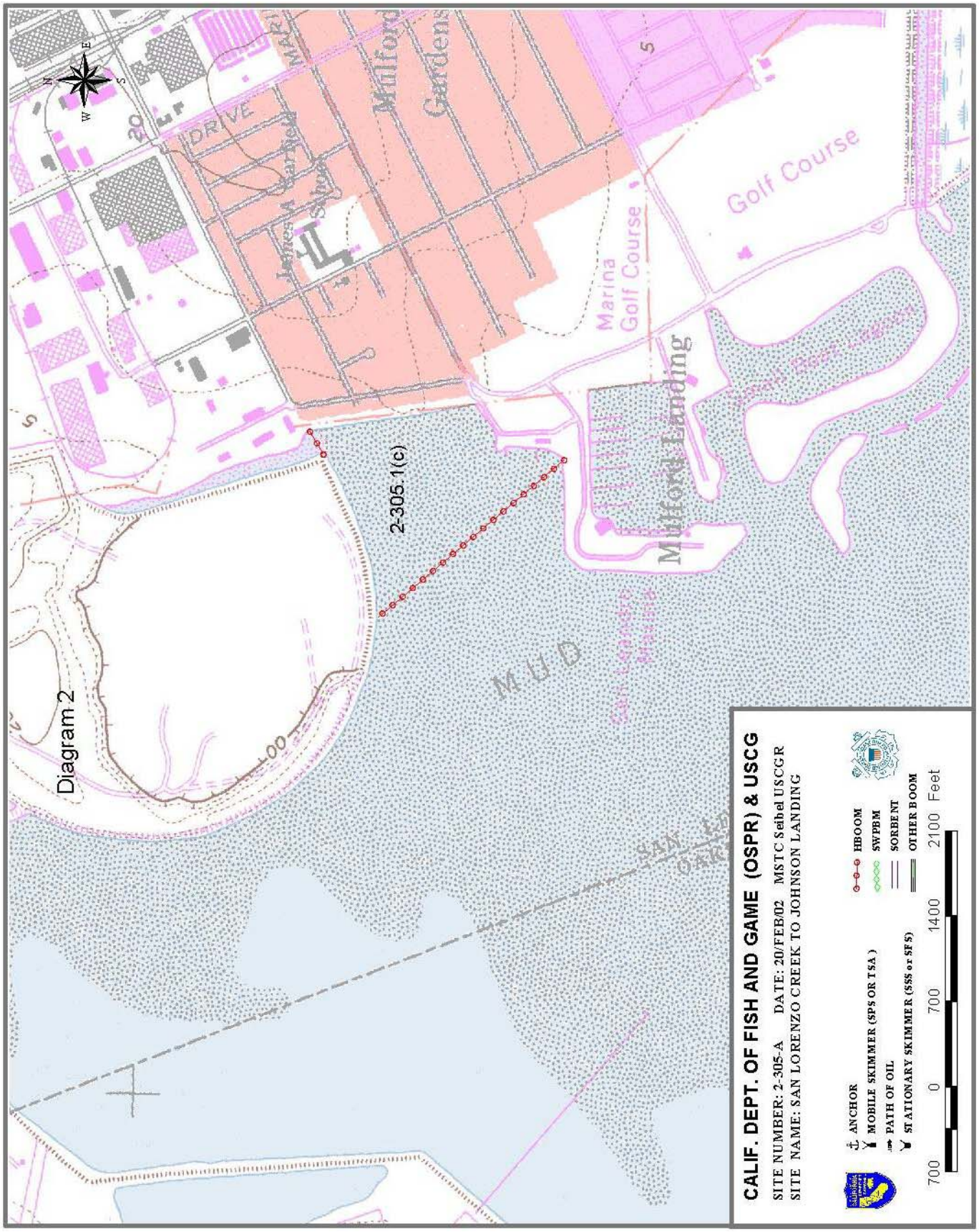
FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
This is all part of East Bay Regional Park's Hayward Shoreline. A small staging area and access is available at the shoreline office at the west end of W. Winton Ave. Access is also available at the west end of Breakwater Ave. adjacent to Highway 92.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-305-A DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: SAN LORENZO CREEK TO JOHNSON LANDING
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER ($SS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
700 0 700 1400 2100 Feet
diagram 1 : Oyster park - Oakland Airport
2-305.1(a)
2-305.1(b)
Oyster Bay Regional Shorline
(land fill)
Sewage Disposal
DOOLITTLE
DAVIS
OAKLAND
INTERNATIONAL
METROPO
Tower

2-305.1(c) San Lorenzo Creek to Johnson Landing - Site Strategy Diagram 2-305.1(c)



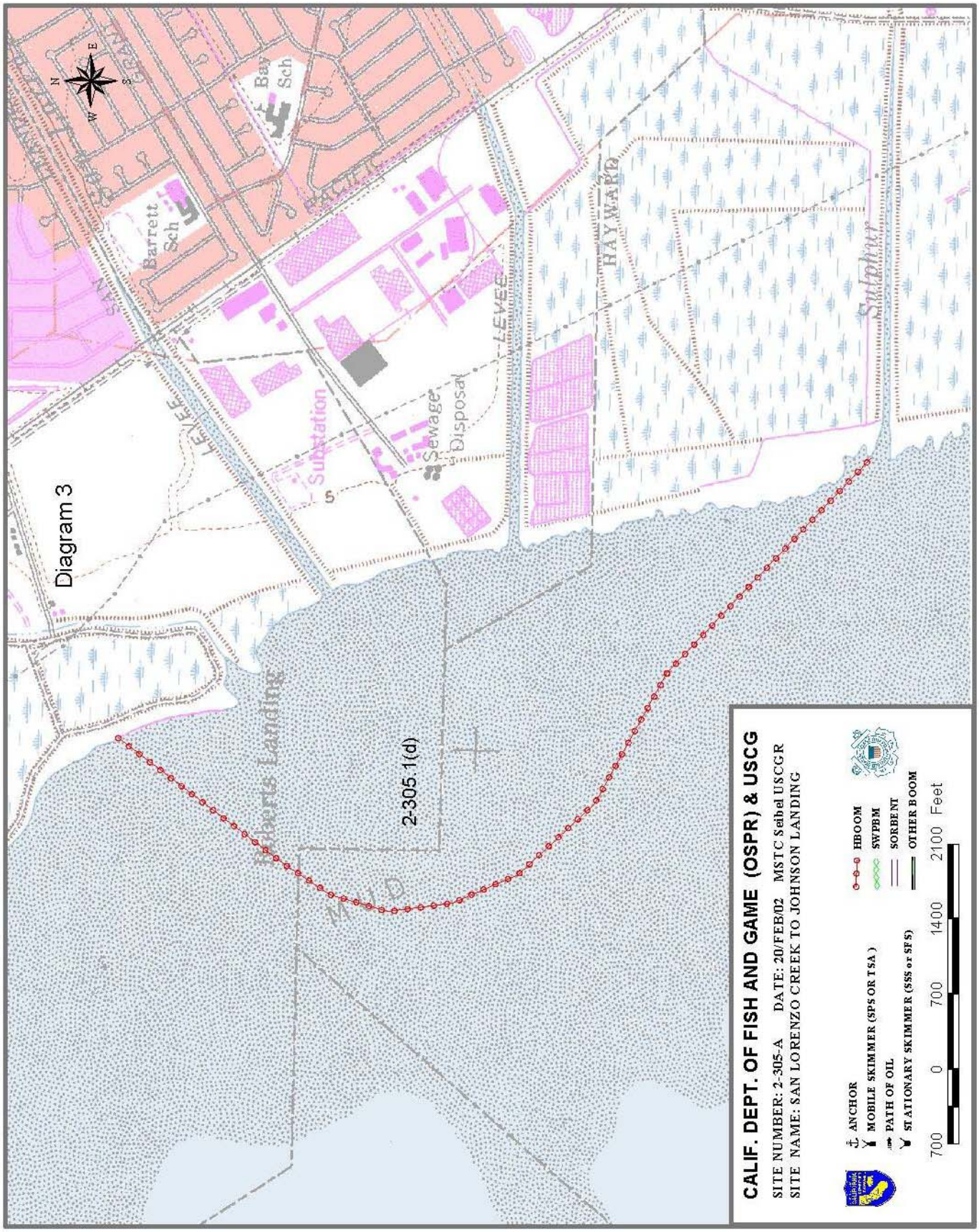
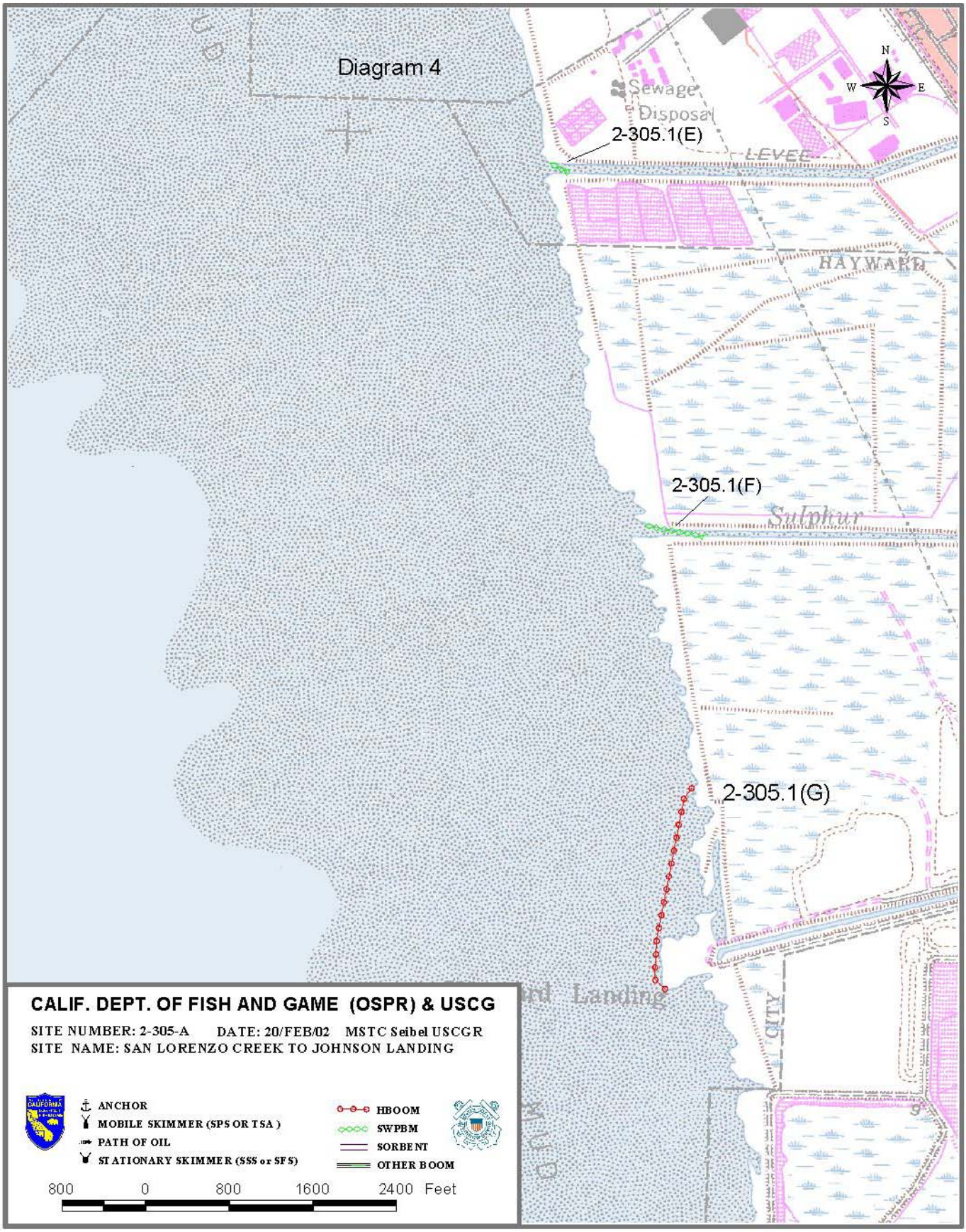


Diagram 3
2-305.1(d)
Roberts Landing
Barrett Sch
Bay Sch
Substation
Sewage Disposal
LEVEE
HAYWARD
Swamp
CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-305-A DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: SAN LORENZO CREEK TO JOHNSON LANDING
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
700 0 700 1400 2100 Feet

2-305.1 e, f, & g San Lorenzo Creek to Johnson Landing - Strategy Diagram 2-305.1 e, f, & g



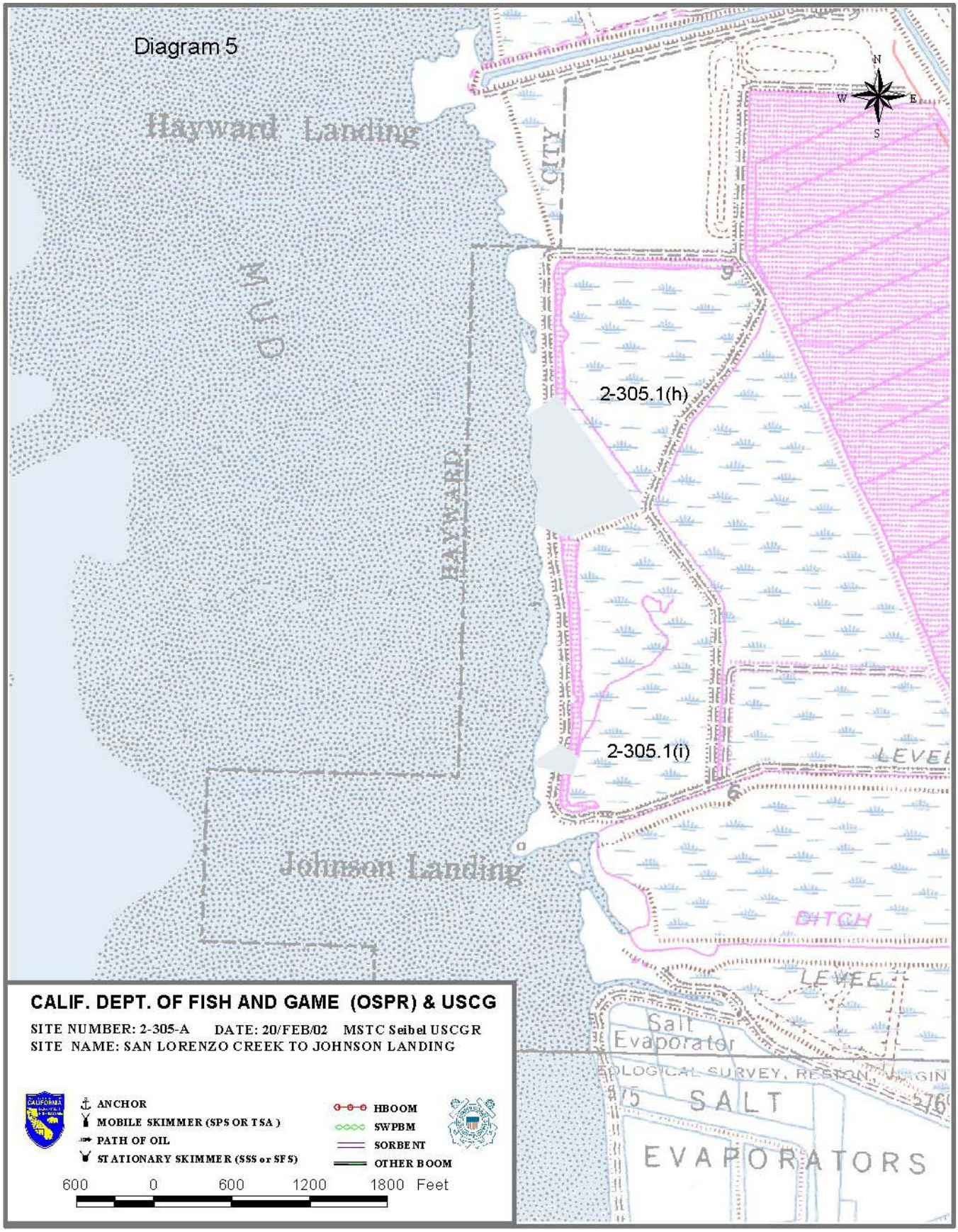


Diagram 5
Hayward Landing
CITY
HAYWARD
2-305.1(h)
2-305.1(i)
Johnson Landing
DITCH
LEVEE
Salt Evaporator
SALT
EVAPORATORS
CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-305-A DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: SAN LORENZO CREEK TO JOHNSON LANDING
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
600 0 600 1200 1800 Feet

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Alameda Creek Marshes - Site Summary 2-306 - A

County: Alameda **GRP** 3 **Latitude** 37 29. N **Longitude** 12202 W
USGS: Redwood Point **OSPR Map:** 158-160 **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
A large contiguous section of marsh located along the east side of south San Francisco Bay and roughly bounded on the north by Highway 92, the east by the Southern Pacific Railroad, on the south by Coyote Hills Slough, and on the west by San Francisco Bay. The most environmentally sensitive area lies between 0.6 and 2.6 miles south of the San Mateo Bridge. This salt marsh system is located on the east shoreline of South San Francisco Bay about one to two miles south of the San Mateo Bridge. It has two miles of bay frontage with multiple openings. Alameda Creek, the flood control channel, Mt. Eden Creek outlet and Union City Slough are the major inlets. Very shallow mudflats extend offshore for a mile. There appear to be failing levees along the edge of the marsh. There are also wetland areas along the inside of the flood control channel that bisects Alameda Creek.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
The marsh is an "A" priority all year.

RESOURCES AT RISK
HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
The endangered California clapper rail and salt marsh harvest mouse live in the marshes.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Ohlone cultural sites are nearby. Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College (707) 664-0880) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
E		Alameda Flood Control/Water Cons. District	(510) 670-5500	
B	Joy Albertson	San Francisco Bay National Wildlife Refuge	(510) 792-0222	
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	
B/T	Mike Josselyn	National Marine Fisheries Service, Tiburon	(415) 454-8868	
E	Chuck Taylor	Cargill Salt	(510) 790-8154	

2-306 - A Alameda Creek Marshes - Site Strategy

Count Alameda **NOAA CHART:** San Francisco Bay, Southern Part **Latitude** 37 29. **N** **Longitude** 12202. **W**

SITE LOCATION: boundaries, landmarks, area to locate and delimit
A large contiguous section of marsh located along the east side of south San Francisco Bay and roughly bounded on the north by Highway 92, the east by the Southern Pacific Railroad, on the south by Coyote Hills Slough, and on the west by San Francisco Bay. The most environmentally sensitive area lies between 0.6 and 2.6 miles south of the San Mateo Bridge.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Shallow water. Seas to 3 feet. Soft mud.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts.

The main concerns are the very sensitive marshes and mudflats here, which are almost impossible to cleanup. The intention is to prevent oil from entering the marshes by diverting to less sensitive shorelines. Avoid disturbing or trampling marsh vegetation and don't trample oil into the mud.

SITE STRATEGIES

Strategy 2-306.1 (USCG Strategic Objective: **5&8**) **Dates:** **SISRS** 3/1/1995 **Approved** **last tested** **ACP date** 10/1/2002

Objective or Prevention

Exclude oil from channels or stranding in the marsh. Divert it to less sensitive and more accessible shorelines on either side.

Technique Details **Check here means ( ) " No strategy diagram" ( ) "Contact CCC"**

a. Block the openings of channels (about six openings) with several layers of sorbent booms.
2. Deploy 8,000-10,000 ft. of harbor boom having a minimum freeboard of 8 inches and a minimum draft of 6 inches offshore around the bay front exposure of the marsh using 30 lb anchors every 100 ft. Deliver the boom by truck or by off shore vessels; levee roads are passable only during dry conditions and mud flats extend offshore for over a mile which limits vessels to very shallow draft (2 feet or less) during lower tides. Ten open water skiffs with two persons each are the minimum number of small craft necessary to undertake this deployment. A sorbent boom will be necessary on the inside of the harbor boom

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type	Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-306.1	10000			10 100-30#w/20'1/2"chain each	15000	17	10			34	yes	5&8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Take Highway 880 south to reach the collection point on the flood control channel and exit at Alvarado Blvd. Proceed northwest on Horner St. and continue until it ends into Veasy St (Veasy St. runs parallel to the flood control channel). To reach the collection point on Alameda Creek, Take Highway 880 south to Alvarado Blvd., and head northwest. Turn left on Union City Blvd., and follow it to where it crosses Alameda Creek.

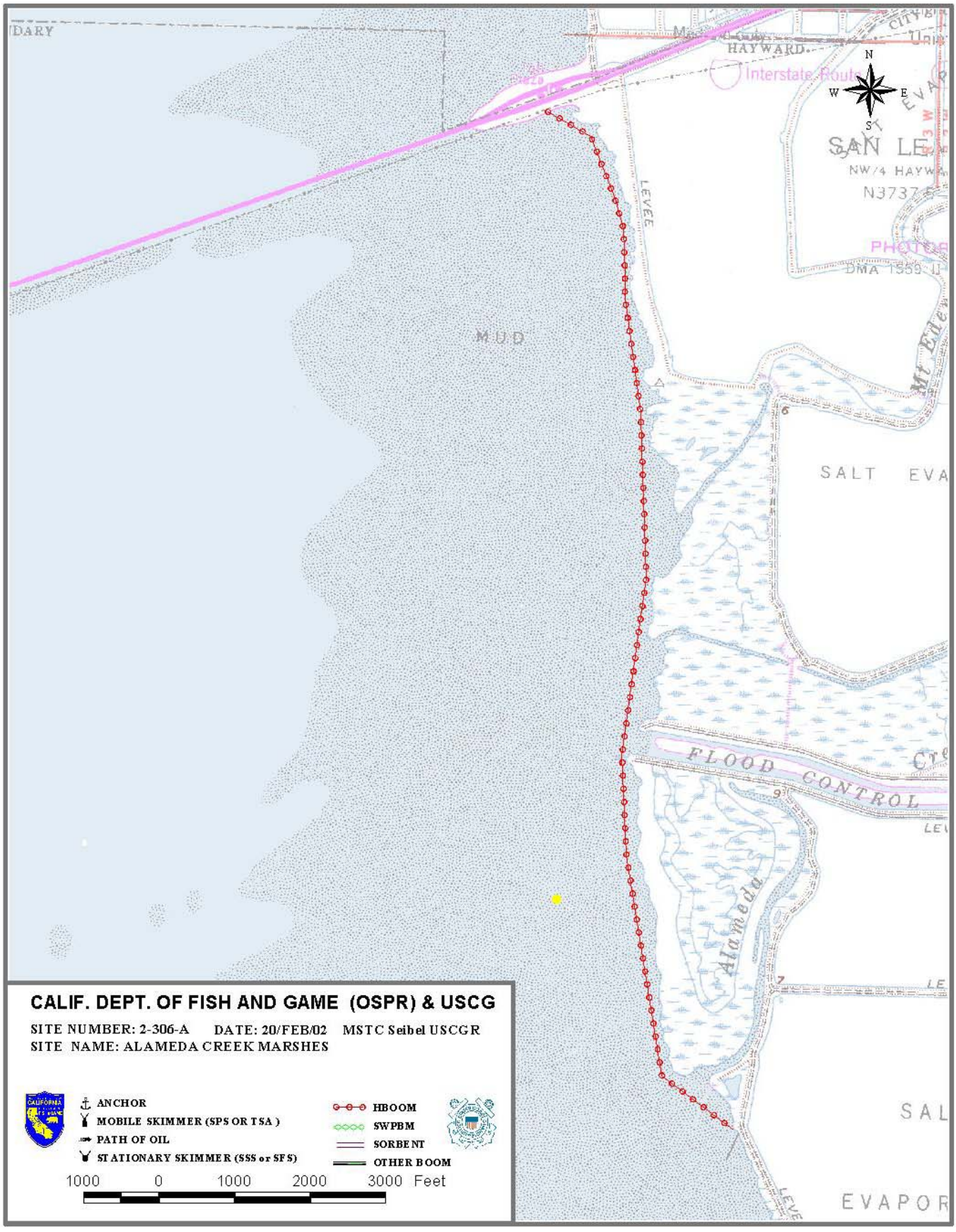
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
Gravel road on flood control levee, dry season salt pond levee roads.

WATER LOGISTICS:
Access limitations: depth, obstructions: Shallow Draft Vessels <6'.
Boat Launching, Loading, Docking and Services Available: Boat launching available at Redwood City Harbor or San Leandro Marina. Small skiffs may be launched from levees or Hayward Regional Shoreline.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Large staging area available at Redwood City Harbor. Small staging area and field post possible at Hayward Regional Shoreline or National Wildlife Refuge HQ. Command Post available at Alameda County OES.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS
Vehicle access is controlled by Cargill Salt and Alameda County Flood Control. Truck turn-arounds are available within several hundred yards of the Bay shoreline.


HAYWARD
Interstate Route
N
W
E
S
LEVEE
MUD
SALT EVA
FLOOD CONTROL
Alameda
EVAPOR
CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-306-A DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: ALAMEDA CREEK MARSHES
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
1000 0 1000 2000 3000 Feet

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Coyote Hills Slough Marshes - Site Summary 2-307 - A

County: Alameda **GRP** 3 **Latitude** 37 29.0 **N** **Longitude** 12202 **W**
USGS: Newark **OSPR Map:** 158-160 **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
A large contiguous section of marsh located along the east side of south San Francisco Bay and bounded on the north by Coyote Hills Slough (Alameda County Flood Control Channel), on the east by the Coyote Hills, on the south by Highway 84, and on the west by San Francisco Bay. Tidal salt marshes along the eastern shore of south San Francisco Bay about four miles south of the San Mateo Bridge. Levees once protected these marshes from tidal action but are now eroded in most places. These marshes also extend along both inside margins of Coyote Hills Slough, which opens to the Bay.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
The marsh is an "A" priority all year.

RESOURCES AT RISK
HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
The endangered California clapper rail and salt marsh harvest mouse live in the marshes. Salt marsh habitat and shallows with complement of fauna and flora.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Ohlone cultural sites are nearby. Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College (707) 664-0880) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
E		Alameda Flood Control/Water Cons. District	(510) 670-5500	
B	Joy Albertson	San Francisco Bay National Wildlife Refuge	(510) 792-0222	
B	Deborah Bartens	Baylands Nature Preserve	(415) 329-2506	
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	
B	Joseph Didonato	East Bay Regional Park District	(510) 635-0135	
B	Janet Hanson	San Francisco Bird Observatory	(650) 728-5816	
B/T	Mike Josselyn	National Marine Fisheries Service, Tiburon	(415) 454-8868	
E	Chuck Taylor	Cargill Salt	(510) 790-8154	

2-307 - A Coyote Hills Slough Marshes - Site Strategy

Count Alameda **NOAA CHART:** San Francisco Bay, Southern Part **Latitude** 37 29. **N** **Longitude** 12202. **W**

SITE LOCATION: boundaries, landmarks, area to locate and delimit
A large contiguous section of marsh located along the east side of south San Francisco Bay and bounded on the north by Coyote Hills Slough (Alameda County Flood Control Channel), on the east by the Coyote Hills, on the south by Highway 84, and on the west by San Francisco Bay.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Shallow water. Seas to 3 feet. Soft mud.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts

The main concerns are the very sensitive marshes and mudflats here, which are almost impossible to cleanup. The intention is to prevent oil from entering the marshes by diverting to less sensitive shorelines. Avoid disturbing or trampling marsh vegetation and don't trample oil into the mud.

SITE STRATEGIES

Strategy 2-307.1 (USCG Strategic Objective: **567**) **Dates:** **SISRS** 3/1/1995 **Approved** **last tested** **ACP date** 10/1/2002

Objective or Prevention

Exclude oil from channels and marsh, and divert it to shorelines less sensitive and more accessible for oil recovery and cleanup.

Technique Details **Check here means ( ) " No strategy diagram" ( ) "Contact CCC"**

a. Deploy 500 ft. of swamp boom and several layers of sorbent boom (up to 2,000 ft) in the openings of small channels, and breaches in levees (about three openings). The marsh behind the broken levee immediately north of Coyote Hills slough is particularly sensitive and vulnerable.

b. When trucks can use the gravel road on south side of Coyote Hills Slough deploy 1,000 ft. of(8 X 8+) harbor boom so as to deflect and contain oil against the south shore of the slough where it can be recovered by a vac truck. May use belt, Wallisep or oil mop type skimmer.

c. Consider booming stands of cord grass to north and south of inlet with sorbent boom.

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type	Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-307.1	1000	500		10 10-30#w/20'1/2"chain each	4000	3	1			10	yes	567

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Hwy 880 to Hwy 84 West. Thornton Ave. exit south to Marshlands Rd. Take Marshlands Rd. out to bay front near foot of Dumbarton Bridge. Access levee road via contact with San Francisco National Wildlife Refuge HQ. Nearest large boat ramp is at Redwood City, small boat launch near Refuge HQ on Newark Slough.

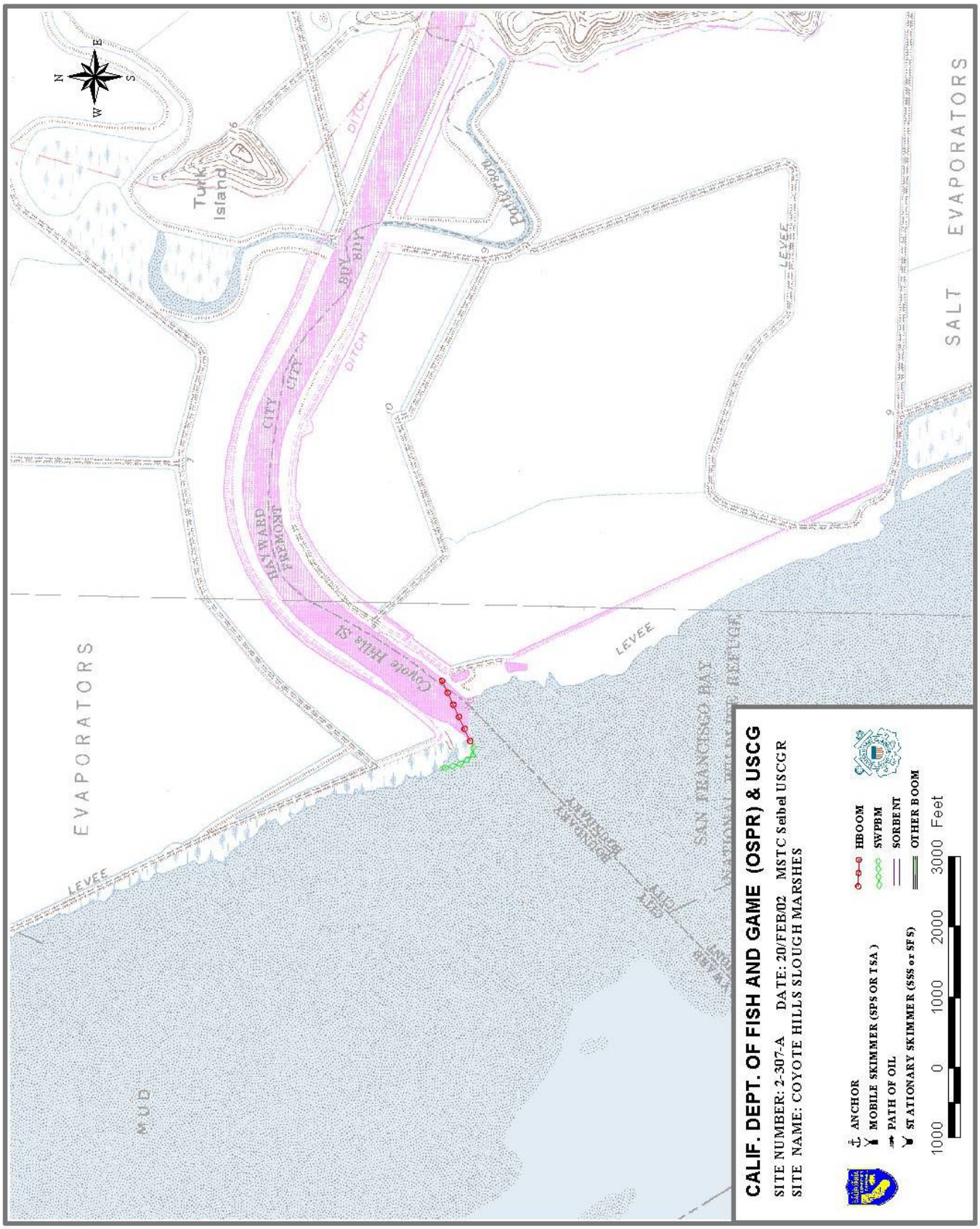
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
Gravel roads to the bay border the Coyote Hills Slough channel.

WATER LOGISTICS:
Access limitations: depth, obstructions: Shallow Draft Vessels <6'
Boat Launching, Loading, Docking and Services Available: Boat launching available at Redwood City Harbor. Small skiffs may be launched from levees.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Large staging area available at Redwood City Harbor. Small staging area and field post possible at National Wildlife Refuge HQ or Coyote Hills Regional Park. Command Post available at Alameda County OES.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS
Vehicle access is controlled by Alameda County Flood Control. Dry season vehicle access on Cargill salt pond levees


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-307-A DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: COYOTE HILLS SLOUGH MARSHES
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER ($SS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
1000 0 1000 2000 3000 Feet
EVAPORATORS
SALT EVAPORATORS
LEVEE
DITCH
Turk Island
Coyote Hills Slough
SAN FRANCISCO BAY
MUD

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San Francisco South Collection/Economic Strategies - Site Summary 2-350 - X

County: San Francisco **GRP** 4 **Latitude** 37 46 N **Longitude** 122 23 W
USGS: San Francisco North **OSPR Map:** 055 **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
The shoreline of San Francisco from Fort Mason to the Bay Bridge. This shoreline consists of man-made structures including piers, seawalls and riprap. The bottom of the channels generally consists of soft sediments. Currents can be strong, approaching 6 knots.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
Herring spawn during the winter (November through April).

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
Aquatic vegetation and invertebrates growing on pilings, seawalls and riprap may be injured by oil and cleanup activities. Herring spawn on these surfaces during the winter months.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)
Sea birds are present throughout the year.
Herring spawn here in the winter. Fish are present throughout the year.
Algae and invertebrates live on all hard surfaces

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College (707) 664-0880) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX

2-350 - X San Francisco South Collection/Economic Strategies - Site Strategy

County San Francisco **NOAA CHART:** Entrance to San Francisco Bay Latitude 3 7 46 N Longitude 122 23 W

SITE LOCATION: boundaries, landmarks, areas to locate and delimit the site
The shoreline of San Francisco from Fort Mason to the Bay Bridge.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
There are sunken obstructions to navigation in many areas, sunken vessels and old pier pilings.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: (regarding sensitive species present, or sediments, burial, organism burrows, tidal channel spreading, watertable limitations,

This collection strategy should be used to take advantage of the slow water between piers and the boats at anchor to divert oil out of swifter along shore currents to shoreline where collection is possible.

SITE STRATEGIES

Strategy 2-350.1 (USCG Strategic Objective: **6**) **Dates:** SISRS 2/6/1999 Approved last tested ACP date 10/1/2002

Objective or Prevention

Economic Objective: Exclude oil from Pier 72 and Pier 98.

Technique Details Check here means ( ) **" No strategy diagram"** ( ) **"Contact CCC"**

Deploy 1000 feet of harbor boom along the shore from the foot of Pier 70 to the southeast corner of Pier 72, anchoring the ends at the pier or seawall. Anchor the middle of this boom 50 to 100 feet offshore. An additional 600 feet of boom may be deployed from the southeast corner of Pier 70 to collect oil on the flood tide. The oil may be collected against the north seawall or deflected to a self propelled skimming vessel.

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type	Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-350.1	1600			4 4		2	1			8		6

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Boat launch ramp near Pier 50 at Mission Rock Resort, 817 China Basin St. Shoreline access from the Embarcadero and China Basin

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
There is access for large trucks on most piers and seawalls.

WATER LOGISTICS:
Access limitations: depth, obstructions: There are sunken obstructions to navigation.
Boat Launching, Loading, Docking and Services Available: Boat launching is available near Pier 50 at Mission Rock Resort, 817 China Basin St.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Flat paved areas for staging and field posts are common throughout this area.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS

There is no Strategy Diagram

Yerba Buena Island - Site Summary 2-351 - A

County: San Francisco **GRP** 3 **Latitude** 37 49 N **Longitude** 122 22 W
USGS: Oakland, West **OSPR Map:** 055 **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
Yerba Buena Island is a 338' high, 0.8 X 0.5 mile, rocky island on Interstate 80 between Oakland and San Francisco. Yerba Buena Island lies between the two spans of the Oakland Bay Bridge. This site is a cobble beach immediately west of the lighthouse on the south side of the island. There is access for foot traffic from parking lot above vice-admiral's house. Walk south to cliff or lighthouse and descend to beach. There is a boat launch at the Treasure Island Yacht Club.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
"A" protection priority during harbor seal pupping season 15 March to 10 June, "B" priority remainder of the year.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
Harbor seal rookery during spring when 30 to 50 seals use the site when tide is below +3 feet above mean low water. 100 to 250 seals haul out at this site during the winter.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College (707) 664-0880) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
B	Dr Peter Baye	USFWS Ecological Services	(707) 562-3003	
E	Steve Edde	US Navy Treasure Island	(415) 743-4704	
B	Diane Kopec	Earth Island Institue (seals)	(415) 788-3666	
B	C. Spencer	San Francisco State University	(415) 252-0291	
E	MSO USCG	US Coast Guard, Marine Safety Office	(510) 437-3073	

2-351 - A Yerba Buena Island - Site Strategy

County San Francisco **NOAA CHART:** Entrance to San Francisco Bay

Latitude		Longitude	
37 49	N	122 22	W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
Yerba Buena Island is a 338' high, 0.8 X 0.5 mile, rocky island on Interstate 80 between Oakland and San Francisco.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Potential for 3 foot seas. Rocky shoreline.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts.

Injury and death to be expected if harbor seal pups inhale or ingest oil. There is high risk of pups ingesting oil while nursing if mothers become oiled.

SITE STRATEGIES

Strategy 2-351.1

(USCG Strategic Objective: **8&7**) **Dates:** **SISRS** **Approved** **last tested** 11/1/1996 **ACP date** 10/1/2002

Objective or Prevention

11/1/1996

Deflect oil from harbor seals and rocks near where they haul out. Avoid driving hauled out harbor seals into the water.

Technique Details **Check here means ( ) " No strategy diagram" ( ) "Contact CCC"**

Deploy 3,000 feet of harbor boom parallel to the shoreline around the south end of the island to keep oil off the pocket beaches just west of lighthouse point. Care must be taken to prevent oil from getting behind the boom at either end. A 200 foot deflection boom should be in place at the west end of the boom during the flood tide. A similar deflection may be necessary at the east end of the boom under some wind and tide conditions.

Anchoring Recommendations: The east end of the boom may be fastened to the southwest corner of the Coast Guard Station or anchored off the rocky point between the station and the lighthouse. The west end of the boom should be anchored west of the sand and gravel beaches but southeast of the western span of the Oakland Bay Bridge. The east end of the boom may be fastened to the USCG station seawall/pier if prior permission is obtained from the commanding officer of the Coast Guard Station. This is most rapidly accomplished through the Coast Guard's Marine Safety Office in Alameda.

Few midpoint anchors are needed where the boom is deployed parallel to straight shorelines. Although the tidal currents are strong, they run parallel to the shore in these areas. Midpoint anchors are needed primarily to keep the boom off the headland below the lighthouse. Danforth anchors are satisfactory in the soft bottoms off the beaches where seals haul out, but Northhill anchors should be used on the rocky bottom below the lighthouse. The boom may be attached to the dolphin pilings off the beaches. Large eye bolts on the rocky point below lighthouse and a small rocky point west of seal haulout beach could also be used for anchoring.

If booms with incompatible end connectors are used they should be overlapped 100 ft. If fence boom is used it should be used at the east end near the Coast Guard docks, and deployed in 500 foot pieces and connected on scene to prevent the twisting to which this boom is prone when towed in long segments. Midpoint and down current anchors can be adjusted after the boom is deployed. Use the crown line to tow anchors offshore or down current to end of the scope on the anchor line while taking care to not tow them into water deeper than the anchor or crown lines.

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type	Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-351.1	3000			15 15 - 40# w/ 20' 1/2" chain		5	2		3000' 1/2" anchor line	14	yes	8&7

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Take Highway 880 to westbound Interstate 80. Get on the Oakland Bay Bridge. While still on the Bridge take the Yerba Buena Island exit (Hillcrest Rd). Follow signs to the USCG Station.

LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
Poor to impossible access from land.

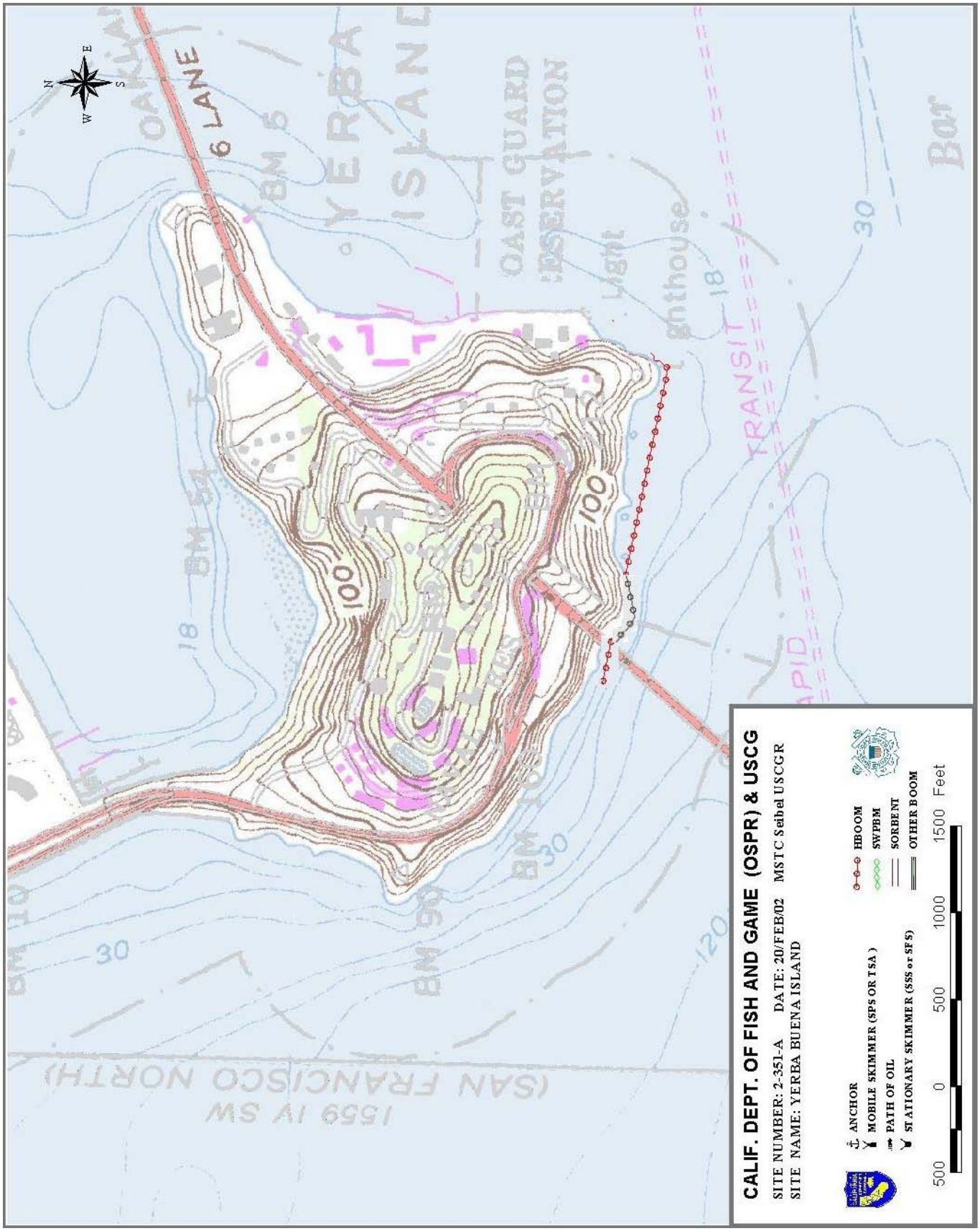
WATER LOGISTICS:

Access limitations: depth, obstructions:	Submerged rocks and rocky shore around most of island.
Boat Launching, Loading, Docking and Services Available:	Estuary Park & Fifth Ave. Marina, Oakland; Ballena Isle Marina, Alameda; Emeryville Marina; Berkeley Marina, Berthing at Treasure Island Marina

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Space for large staging area, and field post or Command Post is available on Treasure Island

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS
Bottom type - hard mud, shell, rocks. Possible staging and collection site at USCG station or US Navy facility. Boom (slick bar) on-scene in water at Treasure Island Navy docks. Contact USCG at YBI and US Navy at TI.


6 LANE
YERBA ISLAND
COAST GUARD OBSERVATION
Lighthouse
TRANSIT
100
100
30
18
CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-351-A DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: YERBA BUENA ISLAND
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
500 0 500 1000 1500 Feet

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South Basin, Hunters Point - Site Summary 2-352 - B

County: San Francisco **GRP** 3 **Latitude** 37 43 N **Longitude** 122 23 W
USGS: San Francisco South **OSPR Map:** 56 **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
South Basin lies between Hunter's Point and Candlestick Point on the San Francisco Peninsula. At the head of South Basin is a narrow fringing marsh and mudflat, shores along Candlestick Point are sandy beaches and riprap, the remainder of the shoreline is concrete slab riprap.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
"B" protection priority year round. During the fall and winter months, high concentrations of waterfowl (1,000's) and migratory shorebirds are present.

RESOURCES AT RISK
HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
There are fringe marshes and tidal mudflats of importance at this site.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)
Waterfowl and shorebirds use this site throughout the year but particularly in winter when large numbers gather here. During the fall and winter months, high concentrations of waterfowl (1,000's) and migratory shorebirds are present.
Eelgrass beds are present.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College (707) 664-0880) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
	DISPATCH	Candlestick Point State Recreation Area	(800) 548-1431	
	NorCom DISPATCH	CA DEPT OF PARKS AND RECREATION	(916) 358-1300	

2-352 - B South Basin, Hunters Point - Site Strategy

County San Francisco **NOAA CHART:** 18649/18650 Entrance to SF Bay

Latitude 37 43 N Longitude 122 23 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
South Basin lies between Hunter's Point and Candlestick Point on the San Francisco Peninsula.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Vessels beware of shallow waters and obstructions.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts.

This site is used by large numbers of birds, particularly in fall/winter, and there are marshes and mudflats which are vulnerable to oiling. The primary concern is to keep oil out of pocket coves by exclusion booming and collection. Always a concern is that response and cleanup will result in impacts: avoid disturbing wildlife, trampling vegetation, tearing up eelgrass beds with anchors and boat props, and tracking oil into marsh and mudflat sediments.

SITE STRATEGIES

Strategy 2-352.1

(USCG Strategic Objective: **5,8**) **Dates:** SISRS 3/1/1995 Approved last tested 4/3/1996 ACP date 10/1/2002

Objective or Prevention

Exclude oil from reaching marsh in South Basin or beaches at Candlestick Point.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"

a) Deploy 1,300 - 1,500 ft. of harbor boom in chevron configuration across narrowed opening to inner South Basin to exclude oil from marsh and mudflat. Place skimmer at apex of boom if oil collects here.

b) Deploy 2,000 ft of harbor boom in a J-hook configuration from middle point at the opening of the inner South Basin to the inside of Candlestick Point. Place skimmer or vacuum truck hose at J-hook pocket near shore if oil collects here.

Strategy 2-352.2

(USCG Strategic Objective: **7**) **Dates:** SISRS 3/1/1995 Approved last tested 4/1/1996 ACP date 10/1/2002

Objective or Prevention

Deflect oil away and past site.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"

Deploy deflection with 500 ft of harbor boom off end of Navy pier.

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type	Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-352.1	3500			5 5 / 22+/ Danforth with chain		3	0	2 SFS	*shallow draft Bboat	15		5,
2-352.2	500			2 2/22+/danforth		1	0		*shallow water Bboat	3		7

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Site is south of San Francisco at Candlestick Point area. Exit Hwy 101 at Candlestick (3Com Park) exit and proceed bayward past 3COM Stadium to Candlestick Point State Recreation Area.

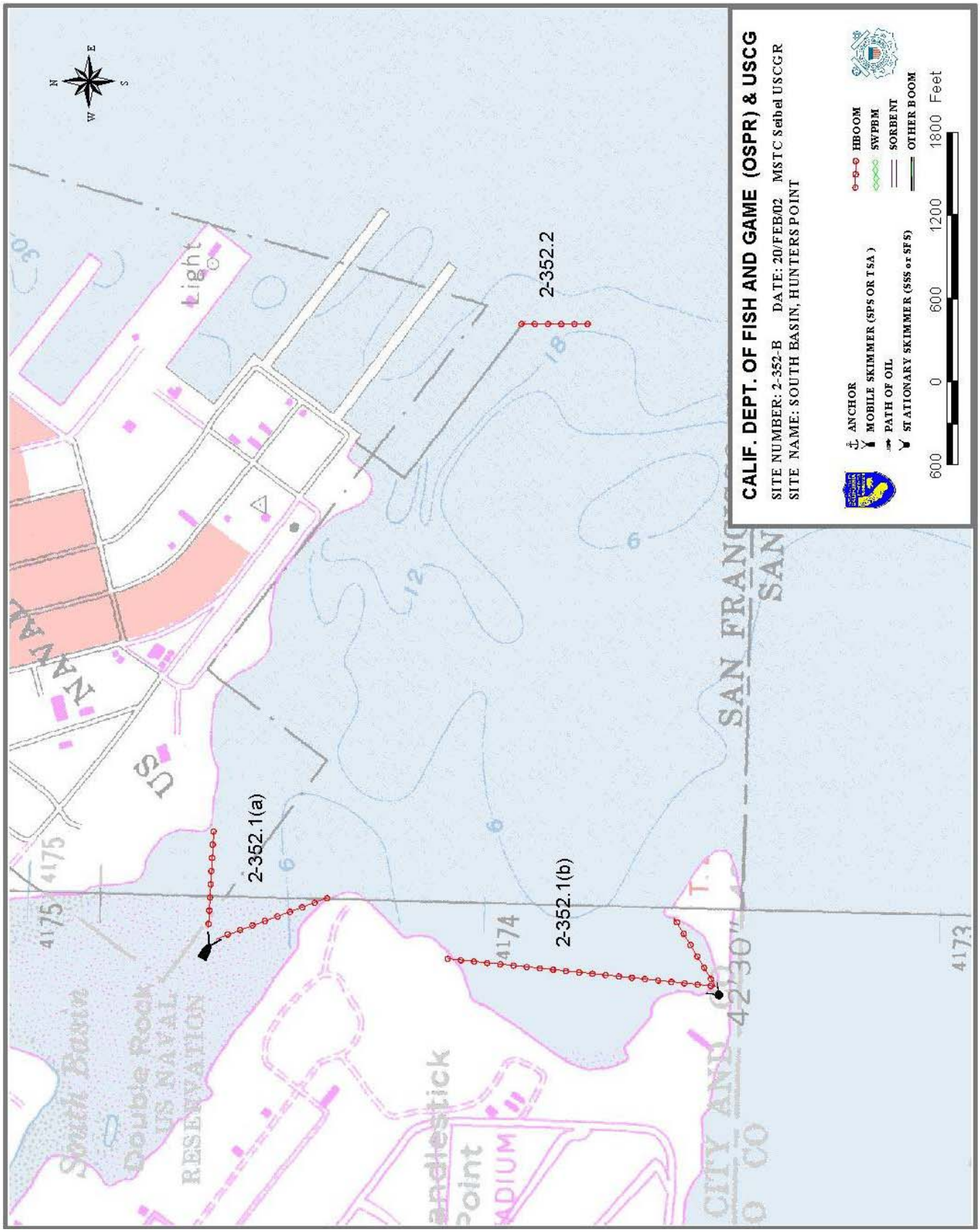
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
Good access all types: contact Park Maintenance.

WATER LOGISTICS:
Access limitations: depth, obstructions: Shallow water and obstructions.
Boat Launching, Loading, Docking and Services Available: Oyster Pt marina, ramps near piers 70 and 50.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging at Candlestick Point. Access restricted from land for heavy trucks. Contact Park Maintenance.

COMMUNICATIONS LIMITATIONS / PROBLEMS No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-352-B DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: SOUTH BASIN, HUNTERS POINT
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
600 0 600 1200 1800 Feet
2-352.2
2-352.1(a)
2-352.1(b)
SAN FRANCISCO
Light
Double Rock
US NAVAL
RESERVATION
Candlestick
Point
4175
4174
4173

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Heron's Head Park - India Basin - Site Summary 2-353 - A

County: San Francisco **GRP** 3 **Latitude** 37 44.3 N **Longitude** 122 22.5 W
USGS: San Francisco South **OSPR Map:** **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
This site includes the entire north margin of India Basin and the land north of the power plant discharge channel. This wetland park is undergoing restoration. It is a narrow peninsula with high ground, about 8 acres of tidal marsh, and mudflat shores. The site has been graded to create a combination of pools and high grounds with walking paths. There are several small tidal inlets on the south and west margins (about 500 ft total length) which admit tidal exchange to interior ponds. There is a channel with power plant cooling water discharge at the southwest edge. The bay to the south is exceedingly shallow. The north side is a riprap/pebble shore with low sensitivity. The site is undergoing natural revegetation, and the marshy vegetation is not very developed at this time. With time it may become increasingly sensitive as marsh vegetation and the marsh community develop fully. For this reason it is now an A-level site.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
Marshes have A-sensitivity and priority protection at all times.

RESOURCES AT RISK
HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
This is a wetland restoration site. It has high ground vegetation, pickleweed marsh, and saltmarsh ponds and lagoons. The site is surrounded by mudflats.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)
A variety of water birds, shorebirds and upland songbirds. Because there is very little marsh habitat on the San Francisco Peninsula, this site has high habitat value.
Potentially this site is suitable for saltmarsh harvest mouse.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
None likely since this site was created by wetland filling.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX
BEL	Carol Bach	Port of San Francisco	(415) 274-0569	(415) 274-0586
LEB	David Hayes	Ca Coastal Conservancy	(510) 286-0736	(510) 286-0470
OLE	Nicholas Salcedo	BCDC - Bay Conservation and Development Com	(415) 557-3689	(415) 557-3767

2-353 - A Heron's Head Park - India Basin - Site Strategy

County San Francisco **NOAA CHART:** 18649/18650 Entrance to SF Bay

Latitude 37 44.3 N Longitude 122 22.5 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site includes the entire north margin of India Basin and the land north of the power plant discharge channel.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
This basin is very shallow - follow the stakes which mark the channel.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts.

The tidal inlets could admit oil to the lagoons, ponds, and low marsh areas on this site. As emergent marshes develop along shorelines, these would also be vulnerable to oil impacts. Exclude oil from all inlets and protect shorelines or deflect away. Avoid trampling marsh vegetation. This is a marsh restoration site.

SITE STRATEGIES

Strategy 2-353.1

(USCG Strategic Objective: **6**) **Dates:** SISRS 6/6/1999 Approved last tested 3/31/2000 ACP date 10/1/2002

Objective or Prevention 3/31/2000

Exclude oil from entering small tidal inlets to inner ponds and lagoons.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"

Close small tidal inlets with shore sections of swamp (river) boom 4X4+ (80ft) and back with sorbent. Stake in place. Several openings are along south middle margin of the site and one at the end of a rock wall opposite the power plant. This can be most easily accomplished by land deployment.

Strategy 2-353.2

(USCG Strategic Objective: **5**) **Dates:** SISRS 2/6/1999 Approved last tested ACP date 10/1/2002

Objective or Prevention

Deflect oil away from site to south shore during conditions when oil is likely to enter India Basin, such as during easterly winds.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"

Deploy 2,500 feet of harbor boom from the east end of the spit to the south shore of India basin. Deploy at an angle to the prevailing wind so that the oil will slide down the boom to the south shoreline where the oil can be collected at the shoreline with shore-based skimming equipment. The boom may be cascaded if that will make it easier to deploy. Stakes may be helpful to keep the boom from forming catenary pockets. Boom can be delivered to site by boat or vehicle. Sites on south side can enable rapid recharge of boom boats from shore support. A cascade may be necessary to admit boat traffic to boat launch at India

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type	Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-353.1	0	80		stakes	80					2	daily checks	6
2-353.2	2500			4 4/22+/danforths & stakes		4	1			12	2	5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
By boat the site is at the back of India Basin: proceed south along the SF waterfront about 4 miles from the Bay Bridge and turn west into India Basin just north of Hunters Pt. - Pt. Avisadero (Light G 5). By vehicle, exit Hwy 101 south of SF center at Army St. Continue east toward Bay on Army and turn south (right) on Evans Ave. Evans Ave becomes Hunters Point Blvd. India Basin Shoreline Park is on the left and there is a marina at Griffith St.

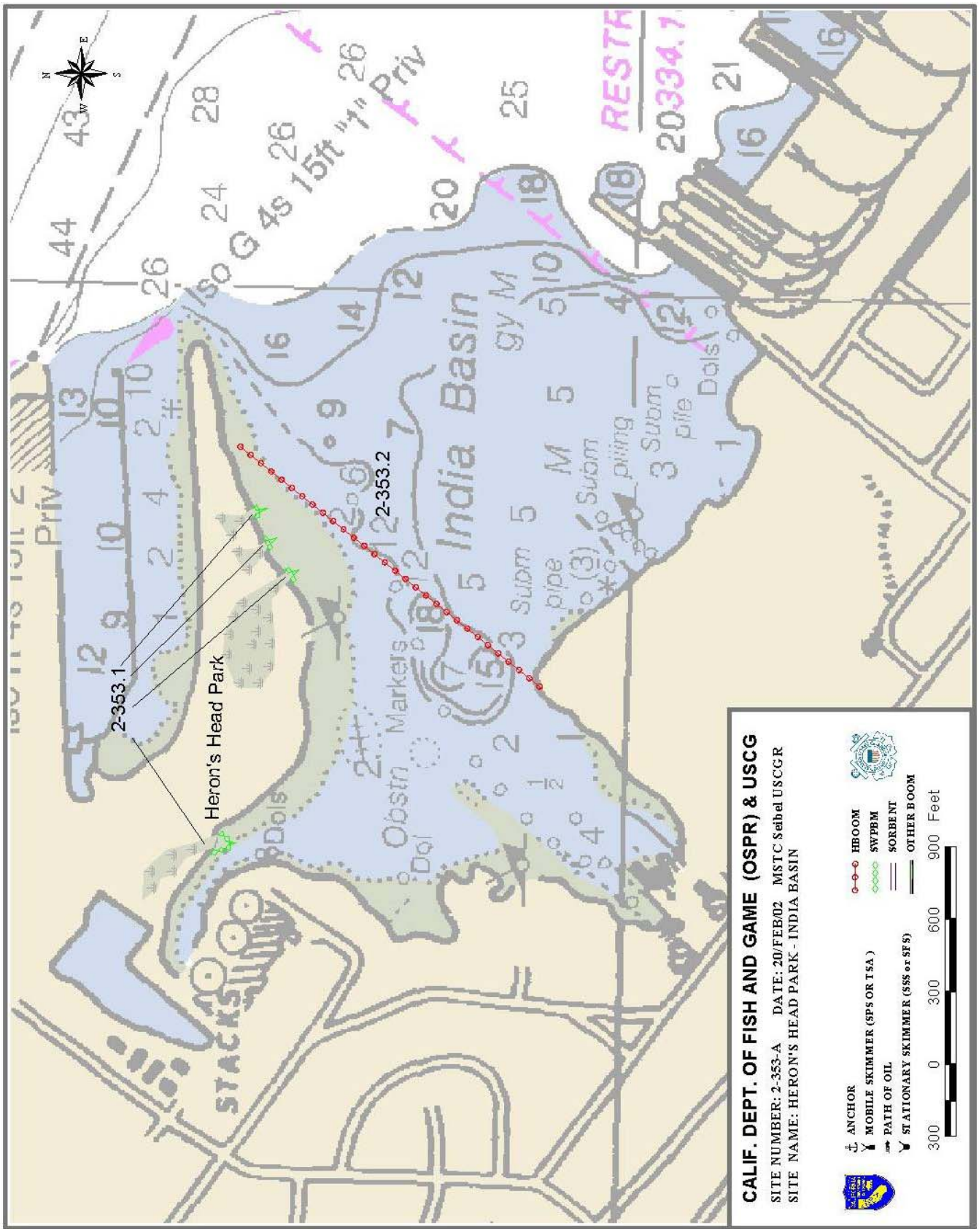
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
Foot & ATV on site. All types on south shore of India Basin.

WATER LOGISTICS:
Access limitations: depth, obstructions: Very shallow < 4' in most of basin and shallower at shore.
Boat Launching, Loading, Docking and Services Available: Launch on south shore of basin.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging on south shore of India Basin.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-353-A DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: HERON'S HEAD PARK - INDIA BASIN
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER ($$S or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
300 0 300 600 900 Feet
2-353.1
2-353.2
Heron's Head Park
India Basin
Iso G 4s 15ft "1" Priv
Obstn
Markers
Dols
Subm pipe
piling
pile
STACKS

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Islais Creek - Pier 94 Saltmarsh - Site Summary 2-354 - A

County: San Francisco **GRP** 3 **Latitude** 37 44.3 N **Longitude** 122 22.5 W
USGS: San Francisco South **OSPR Map:** **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
This 10+ acre site is the corner of Pier 94 at the south edge of the mouth of Islais Creek Channel and extends from Pier 96 back into the channel about a third of a mile. It is a narrow 200+ yard wide parcel along the south side of the channel with high ground and about 5 acres of high saltmarsh. The site had been undergoing fill and there are mounds of rubble interspersed across the pickleweed and saltgrass marsh. The north side is a ripped shore with low sensitivity. There is a small tidal inlet on the east margin near the Pier 96 wharf which admits tidal exchange to an interior marsh there. This site has "A" sensitivity because it is a wetland under restoration and has heavy waterbird and shorebird use during winter.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
This site has "A" sensitivity because it is a wetland under restoration and has heavy waterbird and shorebird use during the winter migration.

RESOURCES AT RISK
HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
This site is traditional saltmarsh that has undergone some filling. It provides valuable wetland habitat in a heavily industrialized portion of the Bay. It has demolition debris fill, high ground vegetation, pickleweed marsh, and saltmarsh ponds. The perimeter is riprap.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)
A variety of water birds, shorebirds and marsh birds.
This is possible saltmarsh harvest mouse habitat.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College (707) 664-0880) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX

2-354 - A Islais Creek - Pier 94 Saltmarsh - Site Strategy

Count San Francisco **NOAA CHART:** 18649/18650 Entrance to SF Bay **Latitude** 37 44.3 N **Longitude** 122 22.5 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This 10+ acre site is the corner of Pier 94 at the south edge of the mouth of Islais Creek Channel and extends from Pier 96 back into the channel about a third of a mile.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Riprap poses slip, trip and fall hazards. Vessels beware of submerged objects and shallows at margins.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts.

The tidal inlet could admit oil to the ponds and low marsh areas on this site. The openings are at the east end and can be protected with exclusion booming at the inlet and protective booming just offshore. Avoid trampling marsh vegetation. This is a marsh restoration site.

SITE STRATEGIES

Strategy 2-354.1

(USCG Strategic Objective: **5,8**) **Dates:** SISRS 6/5/1999 Approved last tested ACP date 10/1/2002

Objective or Prevention
Exclude oil from entering inlet and protect site from oil.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"
Place a 50 ft. length of swamp boom at opening of rocks near Pier 96 wharf and back with sorbent. Stake in place.
Deploy 1,000 feet of harbor boom from Pier 94 to the south shore of the entrance to Islais Creek.

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type	Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-354.1	1000	50		3 3/22+/danforths & stakes	50	1	1			3		5,

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
By boat the site is at the south margin of the mouth of Islais Creek Channel (which is Pier 94): proceed south along the SF waterfront about 4 miles from the Bay Bridge to Islais Creek Channel (just south of Army St. Terminal-North Container Terminal -Pier 80). By vehicle, exit Hwy 101 south of SF center at Army St. Continue east toward Bay on Army and turn south (right) on 3rd St. and then left on Cargo Way. Access through industrial drives toward bay - Pier 94 and Pier 96.

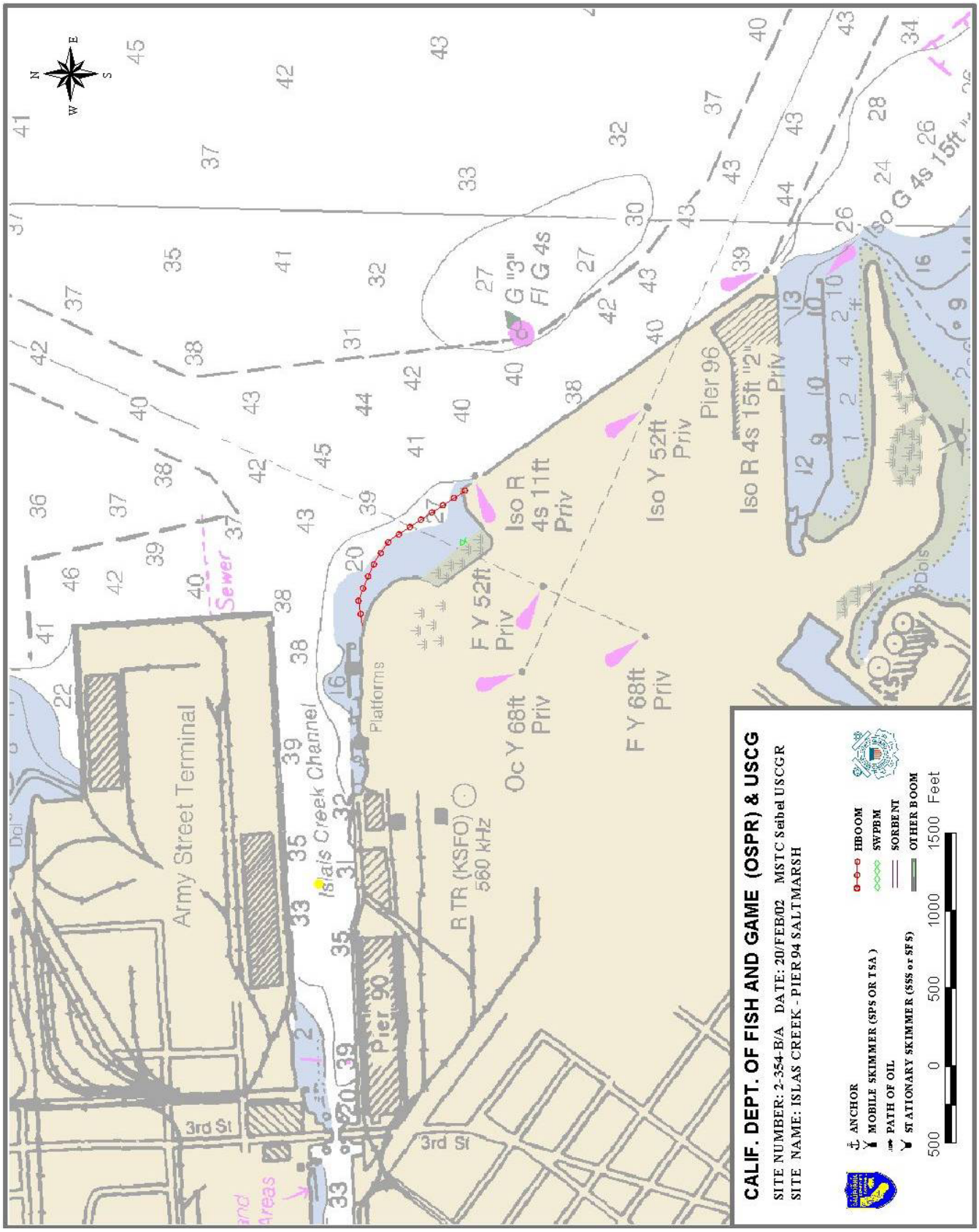
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
Foot & ATV on site. All types to adjacent piers.

WATER LOGISTICS:
Access limitations: depth, obstructions: Submerged objects and shallows at margins.
Boat Launching, Loading, Docking and Services Available: Launch on south shore of India Basin or at South Beach Marina near the Bay Bridge, where there are facilities, fuel and mooring.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging on Pier 96 or Pier 80, either side of the channel.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-354-B/A DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: ISLAS CREEK - PIER 94 SALTMARSH
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER ($$S or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
500 0 500 1000 1500 Feet
Army Street Terminal
Islais Creek Channel
Platforms
Pier 90
3rd St
3rd St
R TR (KSFO) 560 kHz
Oc Y 68ft Priv
F Y 52ft Priv
Iso R 4s 11ft Priv
F Y 68ft Priv
Iso Y 52ft Priv
Pier 96
Iso R 4s 15ft "2" Priv
G "3" Fl G 4s
Iso G 4s 15ft
Sewer

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Airport Mudflat - Site Summary 2-361 - A

County: San Francisco **GRP** 3 **Latitude** 37 36 N **Longitude** 122 22 W
USGS: San Mateo **OSPR Map:** **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
This site is fringing marsh and a large tidal mudflat in a cove between the San Francisco International Airport runway and Coyote Point. The cove is a deeply recessed crescent to the west with riprap on some shores. In the eastern part of the site, along the south shore, two openings allow tidal flow to marshes behind the riprap shore. The eastern-most opening is Sanchez Creek. Shallow water and obstructive debris are present throughout this area.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
"A" protection priority year-round.

RESOURCES AT RISK
HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
The major habitat types present are marshes, mudflats, and riprap. The marsh is at the back of the cove at the northwest margin and behind the riprap in the south side. Tidal mudflats span the site.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)
The endangered California clapper rail is a resident of the marsh. The cove serves as a feeding and resting area for waterfowl, wading birds and shorebirds. The mudflat is a feeding area for shorebirds. Waterfowl and shorebird use is highest in the fall and winter.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College (707) 664-0880) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX

2-361 - A Airport Mudflat - Site Strategy

County San Francisco **NOAA CHART:** 18649/18650 Entrance to SF Bay

Latitude 37 36 N Longitude 122 22 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site is fringing marsh and a large tidal mudflat in a cove between the San Francisco International Airport runway and Coyote

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Aircraft beware: this is in or near S.F. International Airport restricted airspace; hazards from incoming planes. Vessels beware of shallow water and submerged obstructions.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts.

This site is used by endangered birds to breed and many other birds throughout the year for resting and feeding. The primary concern is to keep oil from entering the marshes and to keep oil out of the cove where birds gather. In addition, response activity itself can be severely damaging: avoid harassing wildlife, trampling marsh plants, treading oil into marsh and mud, or disturbing the tidal flat

SITE STRATEGIES

Strategy 2-361.1 (USCG Strategic Objective: **5**) **Dates:** SISRS 3/1/1995 Approved last tested ACP date 10/1/2002

Objective or Prevention

Exclude oil from entering marsh openings and cove.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"

a) Deploy 7,600 ft. of harbor boom along the outer edge of the intertidal mudflat to exclude oil from the marsh. Line boom from SE corner of runway along mudflat to riprap on southern shoreline.
b) Exclude oil from entrance to "pond" on south shore with 200 ft. of harbor boom doubled back across entrance (100 ft. across two times)
c) Exclude oil from Sanchez Creek, a riprap slough channel leading to the large marsh along freeway. Deploy 400 ft. of harbor boom in apex configuration out from channel entrance with two 200 ft. legs each.

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type	Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-361.1	8200			35 35/20-40/danforth w chain		4	4		4 shallow draft boomboats	28		5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Vehicle access available near the shoreline: From Hwy 101, exit on Millbrae and drive along shoreline on Bayshore Hwy and Airport Blvd., or exit on Peninsula Ave and proceed bayward on Coyote Point Drive to Coyote Point County Recreation Area and Coyote

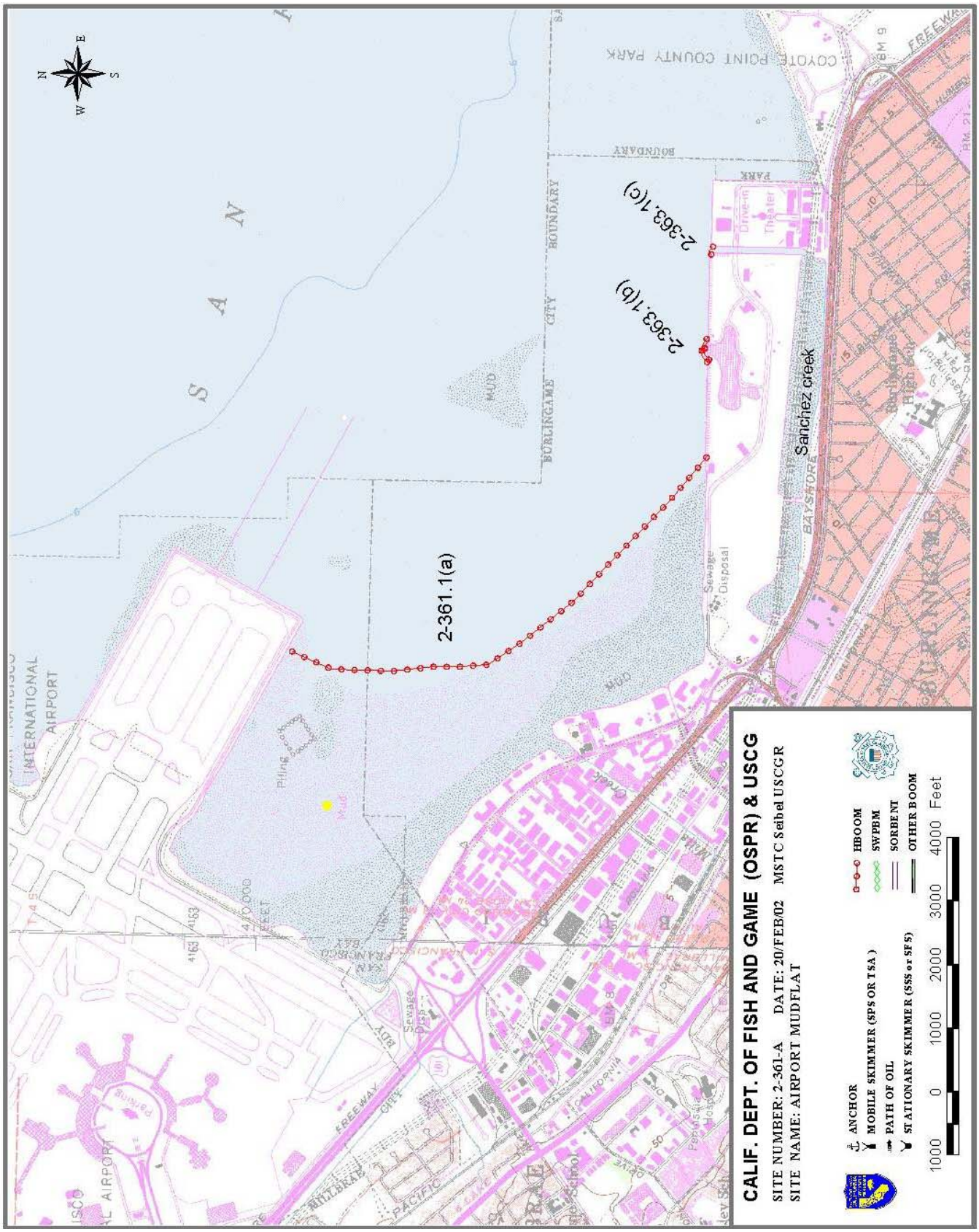
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
Large truck.

WATER LOGISTICS:
Access limitations: depth, obstructions: Extremely shallow waters and obstructions are limiting.
Boat Launching, Loading, Docking and Services Available: Coyote Pt. Marina and Oyster Pt. Marina

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging at Coyote Point Marina, Oyster Point Marina, possibly SF airport, and parking lots along south shore.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


2-361.1(a)
2-363.1(b)
2-363.1(c)
Sanchez Creek
CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-361-A DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: AIRPORT MUDFLAT
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
1000 0 1000 2000 3000 4000 Feet

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Belmont Slough - Site Summary 2-362 - A

County: San Mateo **GRP** 3 **Latitude** 37 33 N **Longitude** 122 15 W
USGS: Redwood Point, California **OSPR Map:** 157 **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
This site includes the length of Belmont Slough and branching sloughs (Bay Slough) and the saltmarsh and mudflat frontage at the Bay front. Belmont Slough is a narrow channel on the southwest shore of South San Francisco Bay, one mile south of the San Mateo-Hayward Bridge. Marsh and mudflat are present at the mouth and along its banks. There is a large bay front saltmarsh between the bay and Bay Slough. The mudflat bayward of the marsh is very wide and shallow. It is part of San Francisco National Wildlife Refuge and California Department of Fish and Game Redwood Shores Ecological Reserve.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
"A" priority all year. Endangered species are present all year.

RESOURCES AT RISK
HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
Main habitats of concern are bay front and slough margin saltmarsh and extensive tidal mudflats.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)
Sensitive bird species found here include: Endangered - California clapper rail, California brown pelican, peregrine falcon, California least tern; California Species of Special Concern: saltmarsh common yellowthroat, Alameda song sparrow. Also, large numbers of a wide variety of birds nest and winter here: shorebirds, waterfowl, wading birds, and waterbirds.

Sensitive mammals species found here include: salt marsh harvest mouse and salt marsh wandering shrew. Harbor seals frequent this site.

The sloughs and mudflats are important habitat for fish, shellfish and infauna and foraging habitat for birds.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College (707) 664-0880) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX

2-362 - A Belmont Slough - Site Strategy

County San Mateo **NOAA CHART:** 18649/18650 Entrance to SF Bay **Latitude** 37 33 N **Longitude** 122 15 W

SITE DESCRIPTION: boundaries, landmarks, areas to locate and delimit site
This site includes the length of Belmont Slough and branching sloughs (Bay Slough) and the saltmarsh and mudflat frontage at the Bay front.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Aircraft beware of high power wires. Vessels be aware that Belmont Slough is very narrow and unmarked and mudflats and margins are very shallow.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts.

The concern is oil and response impacts to marsh, wildlife, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Belmont Slough. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into marsh and mud.

SITE STRATEGIES

Strategy 2-362.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 3/1/1995 Approved last tested ACP date 10/1/2002

Objective or Prevention
Exclude oil fom entering Belmont Slough.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"
a) Deploy several 600 to 1,000+ ft. sections of 30 to 48 inch harbor boom cascading south along the mudflat/channel shelf contour to deflect oil back into main current and away from shore.
b) Deploy 200 ft. of tidal barrier boom from prominent riprap point NW of Belmont Slough entrance marsh, across mudflat to channel margin. Exclude and deflect oil away from the marsh into a skimmer located in the main channel near the confluence of Belmont and Bay Sloughs.

Strategy 2-362.2

(USCG Strategic Objective: **8**) **Dates:** SISRS 3/1/1995 Approved last tested ACP date 10/1/2002

Objective or Prevention
Deflect oil from bayfront tidal marsh.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"
Deploy 6,000 ft. of exclusion boom on the bay side of salt marsh island in front of Bay Slough. At the north end connect with boom leg of skimmer system. Tidal barrier boom is preferred, however, harbor boom backed with several layers of sorbent boom may also be adequate.

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type		Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-362.1	4000		200	TBB	18 18/40/ Danforth		3	0	1 SPS		14		5
2-362.2			6000	TBB	35 35/22+/Danforth		2	3			16		8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Primary access is via water since land access is limited by fronting marsh. By land, exit Hwy 101 at East Hillsdale Blvd and proceed on Hillsdale or Foster City Blvd. bayward to Beach Park Blvd.

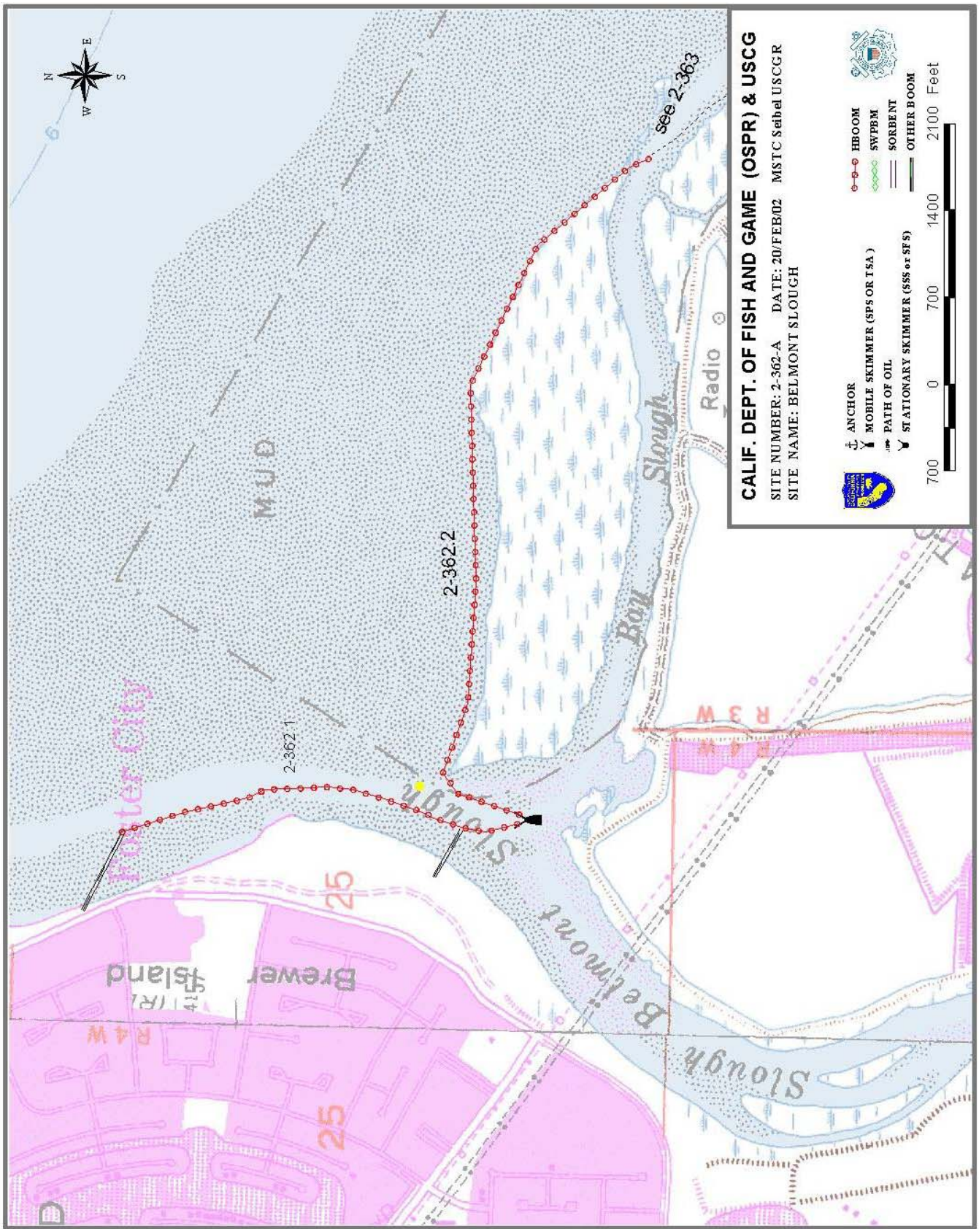
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
All types along Beach Park Blvd.

WATER LOGISTICS:
Access limitations: depth, obstructions: Extreme shallows and mudflats at low tide.
Boat Launching, Loading, Docking and Services Available: Redwood City Marina.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging at Redwood City Marina, harbor and possibly along Beach Park Blvd. on Brewer Island in Foster City.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-362-A DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: BELMONT SLOUGH
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER ($SS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
700 0 700 1400 2100 Feet
see 2-363
2-362.2
2-362.1
MUD
Radio
Bay
Slough
Belmont
Slough
Brewer Island
Hunter Cut
R3W
R4W
25
25

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Steinberger Slough - Site Summary 2-363 - A

County: San Mateo **GRP** 3 **Latitude** 37 32 N **Longitude** 122 14 W
USGS: Redwood Point, California **OSPR Map:** 157 **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
This site extends from the mouth of Bay Slough to Bair Island and includes the marshes landward along Steinberger Slough and Smith Slough to Hwy 101. Steinberger Slough is on the southwest shore of South San Francisco Bay, two miles south of the San Mateo-Hayward Bridge. It lies to the northwest of Bair Island. This slough has no defined channel and is shallow. It has a well developed marsh and mudflat at the mouth and along its banks. It is part of San Francisco National Wildlife Refuge and California Department of Fish and Game Bair Island and Redwood Shores Ecological Reserve.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
"A" priority all year. Endangered species are present all year.

RESOURCES AT RISK
HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
This site has extensive marshes and mudflats at the mouth and along its length.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)
Sensitive bird species found here include: Endangered - California clapper rail, California brown pelican, peregrine falcon, California least tern; Threatened - western snowy plover; California Species of Special Concern: saltmarsh common yellowthroat, Alameda song sparrow. Also, large numbers of a wide variety of birds nest and winter here: shorebirds, waterfowl, wading birds, and waterbirds.
Sensitive mammals species found here include: salt marsh harvest mouse and salt marsh wandering shrew.
The sloughs and mudflats are important habitat for fish, shellfish and infauna.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College (707) 664-0880) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX

2-363 – A Steinberger Slough - Site Strategy

County San Mateo **NOAA CHART:** 18649/18650 Entrance to SF Bay **Latitude** 37 32 N **Longitude** 122 14 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site extends from the mouth of Bay Slough to Bair Island and includes the marshes landward along Steinberger Slough and Smith Slough to Hwy 101.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Aircraft beware of overhead power lines nearby; vessels be aware of shallow water; channel not clearly marked.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts.

The concern is oil and response impacts to marsh, wildlife, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Steinberger Slough. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern are the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into marsh and mud.

SITE STRATEGIES

Strategy 2-363.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 3/1/1995 Approved last tested ACP date 10/1/2002

Objective or Prevention
Exclude oil from entering/leaving Steinberger Slough.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"

a) Deploy 3,500 ft. of 18" deflection harbor boom along the north side channel margin to divert oil to a skimmer positioned in the main slough channel. Connect this boom to exclusion boom deployed as part of the Belmont Slough strategy (2-362-A) to exclude oil from Bay Slough and the marsh NW of Steinberger Slough mouth.

b) Place a vessel operated skimmer in main slough channel. Use a portion of original 3,500 ft. of boom deployed for legs of skimmer. Connect southern leg to levee or extend out to remnant concrete pier on small island on the south side of main channel.

c) Place 500 ft. tidal barrier boom across mudflats on both sides of main channel. Connect to harbor boom.

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type		Number and kind of Anchoring system		sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-363.1	3500		500	TBB	16	16/22+/danforth & chain		2	1	1 SPS	Bboat: very shallow draft	13		5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Nearest vehicle access is San Carlos Airport: exit Hwy 101 at Holly/Redwood Shores Pkwy.

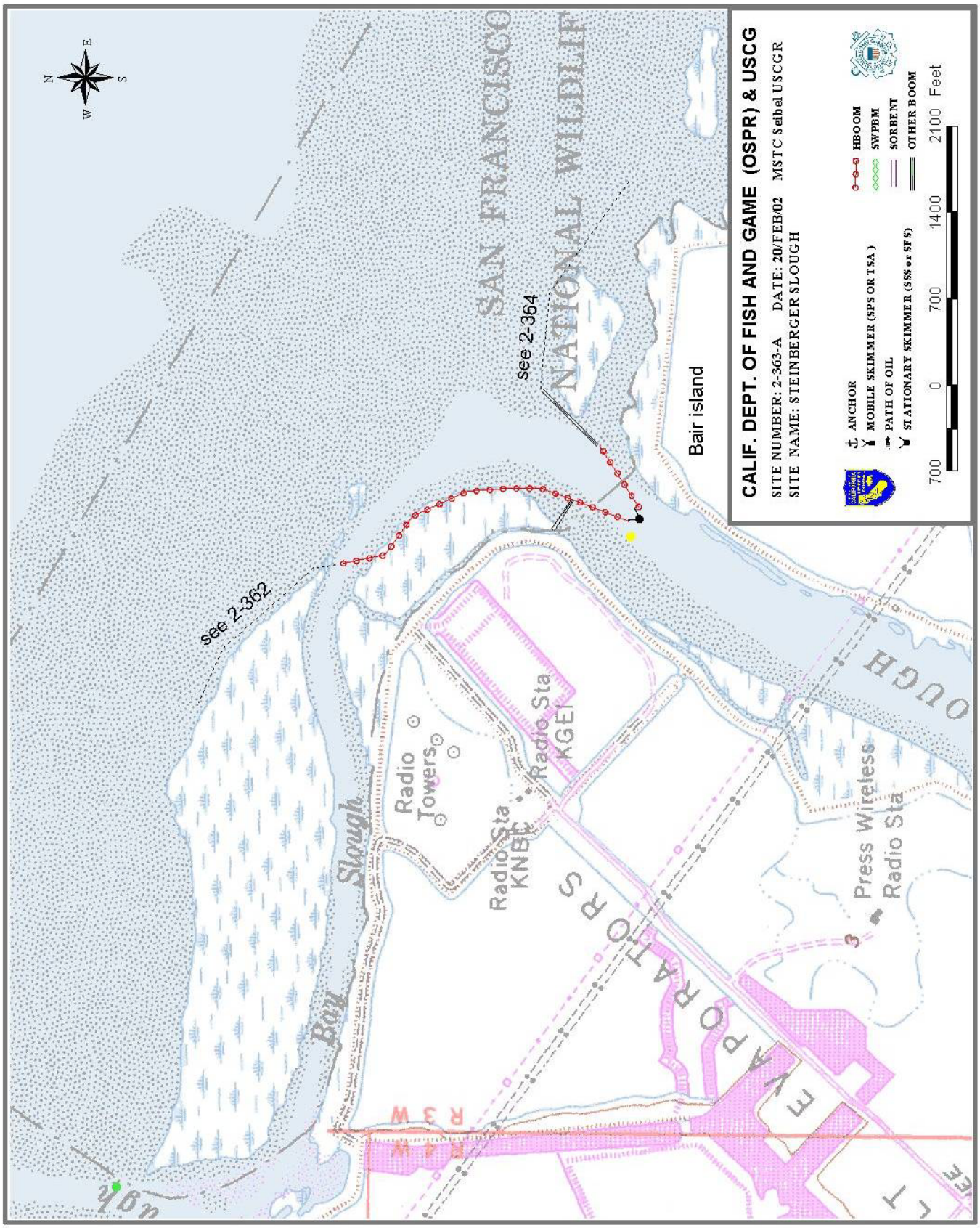
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
No road access to Bair Island.

WATER LOGISTICS:
Access limitations: depth, obstructions: No defined channel, impassable at low tide, very shallow.
Boat Launching, Loading, Docking and Services Available: Nearest launch is at Redwood City.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging at Port of Redwood City, possibly through sewage facility on north side of channel.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-363-A DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: STEINBERGER SLOUGH
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
700 0 700 1400 2100 Feet
SAN FRANCISCO NATIONAL WILDLIF
see 2-364
Bair island
see 2-362
Bay Slough
Radio Towers
Radio Sta KNBC
Radio Sta KGEI
Press Wireless Radio Sta
R 3 W
R 4 W

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Bair Island - Site Summary 2-364 - A

County: San Mateo **GRP** 3 **Latitude** 37 32 N **Longitude** 122 14 W
USGS: Redwood Point, California **OSPR Map:** 157 **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
The site includes all of Bair Island between the mouths of Redwood Creek and Steinberger Slough. Bair Island has an extensive marsh complex inside its levees. Water flows through breaches in several places around the island. A large fringe marsh exists outside the levee along Redwood Creek. The "island" is located on the southwest shore of South San Francisco Bay, three miles south of the San Mateo-Hayward Bridge. It is bounded on the southeast by Redwood Creek, on the northwest by Steinberger Slough and on the south by Corkscrew Slough. It is part of San Francisco National Wildlife Refuge and California Department of Fish and Game Bair Island Ecological Reserve.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
"A" priority all year. Endangered species are present all year. The greatest risk to harbor seals is during spring breeding season 15 March - 10 June: pups can ingest oil on female's fur during nursing; disturbance during brief lactation period (3-5 weeks) can reduce pup's survival after weaning. Moderate risk year-round from inhalation of volatile oil fractions and ingestion of contaminated prey.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
This has an extensive marsh complex inside its levees. Water flows through breaches in several places around the island. A large fringe marsh exists outside the levee along Redwood Creek and outer levees and islands. The bay frontage has an extensive tidal mudflat.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)
Sensitive bird species found here include: Endangered - California clapper rail, California brown pelican, peregrine falcon, California least tern; Threatened - western snowy plover; California Species of Special Concern: saltmarsh common yellowthroat, Alameda song sparrow. Also, large numbers of a wide variety of birds nest and winter here: shorebirds, waterfowl, wading birds, and waterbirds.

Sensitive mammals species found here include: salt marsh harvest mouse and salt marsh wandering shrew. Harbor seals haul out along north side of creek. This is the largest harbor seal rookery in San Francisco Bay. Seal numbers during spring/breeding season have reached 350 adults + 100 pups, nonbreeding 5 - 70 seals.

The sloughs and mudflats are important habitat for fish, shellfish and infauna.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College (707) 664-0880) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX

2-364 - A Bair Island - Site Strategy

County San Mateo **NOAA CHART:** 18649/18650 Entrance to SF Bay

Latitude 37 32 N Longitude 122 14 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
The site includes all of Bair Island between the mouths of Redwood Creek and Steinberger Slough.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Aircraft beware of overhead power lines nearby. Vessels be aware of shallow water.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts.

The concern is oil and response impacts to marsh, wildlife, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering openings to Bair Island and adjacent sensitive sites. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into marsh and mud.

SITE STRATEGIES

Strategy 2-364.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 3/1/1995 Approved last tested ACP date 10/1/2002

Objective or Prevention
Exclude oil from entering Bair Island: close openings to interior.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"
a) Several breaches in the levee around Bair Island exist. These channel entrances lead to an extensive marsh complex inside Bair Island. It is critical that these channel entrances be blocked. The use of 200 ft. of harbor boom, swamp boom, and/or sorbent boom, and sand bags, or a combination thereof may be deployed.
b) A large levee breach exists approximately halfway between Steinberger Slough and Redwood Creek. This channel entrance should be blocked using any methods or equipment possible.

Strategy 2-364.2

(USCG Strategic Objective: **8**) **Dates:** SISRS 3/1/1995 Approved last tested ACP date 10/1/2002

Objective or Prevention
Divert oil from exposed marsh frontage.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"
Deploy 4,000 ft. of exclusionary tidal barrier boom around unleveed marsh on eastern Bair Island, northwest of Redwood Creek, beginning near levee breach midway along the bay side shore. Extend boom east and south into Redwood Creek channel. Connect with harbor boom from Redwood Creek strategy (2-365-A).

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom	/ type	Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-364.1	0	200			3 3/22+/danforth c chain	200	1	1		very shallow Bboat	5		5
2-364.2	0		4000	TBB	17 17/22+/danforth c chain & line		2	1		Very shallow water Bboat			8

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Bair Island has no vehicular access. By water it is at the mouth and to the north of Redwood Creek, just bayward of the Port of Redwood City.

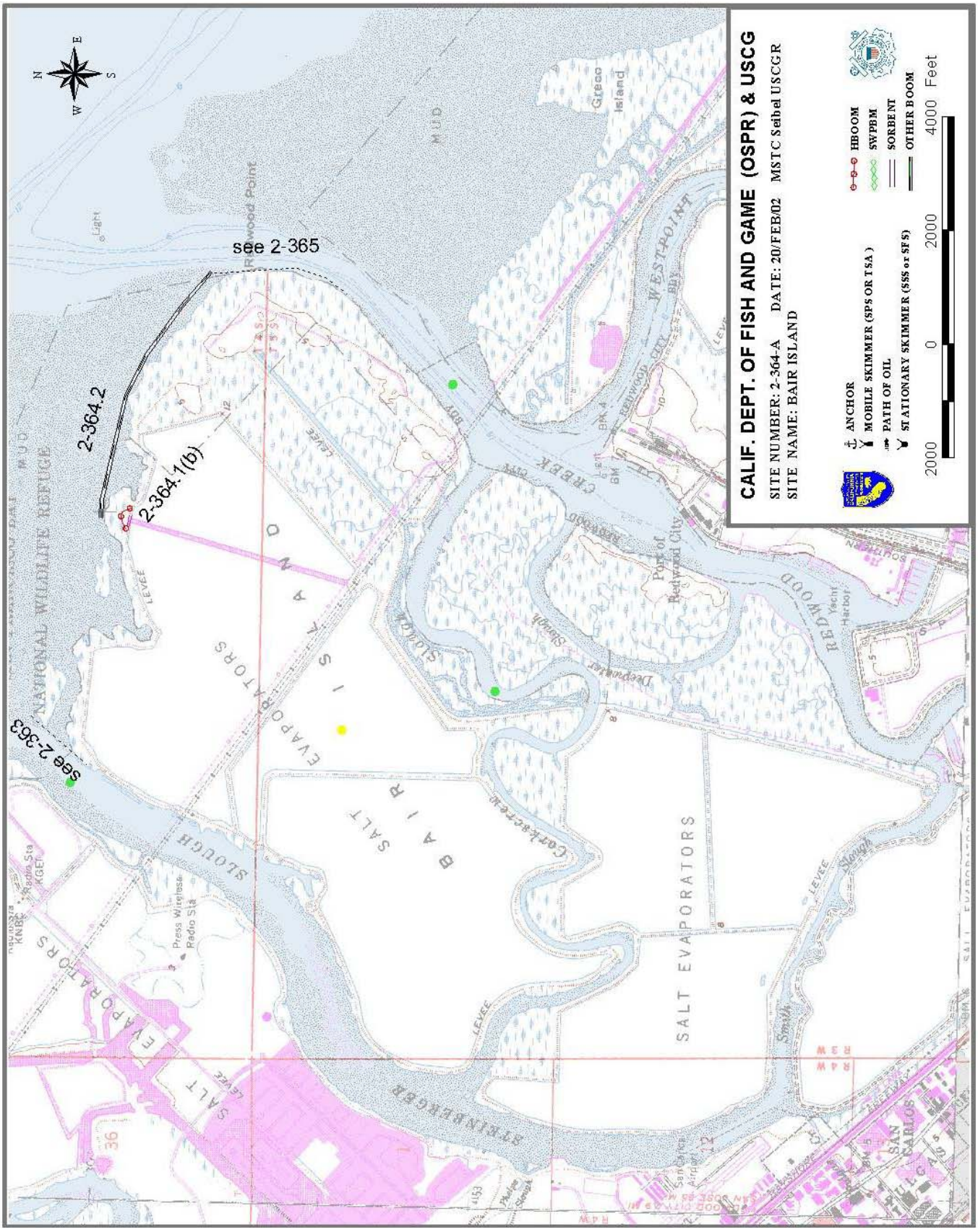
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
Foot: no road access to Bair Island.

WATER LOGISTICS:
Access limitations: depth, obstructions: Very shallow on bay frontage and at margins.
Boat Launching, Loading, Docking and Services Available: Port of Redwood City.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging at Port of Redwood City.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-364-A DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: BAIR ISLAND
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
2000 0 2000 4000 Feet
see 2-365
2-364.2
2-364.1(b)
see 2-363
NATIONAL WILDLIFE REFUGE
Greco Island
Redwood Point
WESTPOINT
CREEK
Port of Redwood City
REDWOOD
Yacht Harbor
Slough
Deepwater
SALT EVAPORATORS
BAIR ISLAND
Cattail Creek
STEINBERGER
SAN CARLOS
Press Wireless Radio Sta
Radio Sta KGEI
KNBC
LEVEE
MUD

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Redwood Creek - Site Summary 2-365 - A

County: San Mateo **GRP** 3 **Latitude** 37 32 N **Longitude** 122 14 W
USGS: Redwood Point, California **OSPR Map:** 157 **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
The site includes Redwood Creek from its mouth to Hwy 101 and Westpoint Slough, and several small side channels (but not Corkscrew Slough). Redwood Creek is the dredged channel for the Port of Redwood City. Its banks are lined with cordgrass and pickleweed marshes. Large tidal flows through this creek feed other connecting sloughs and marshes. Portions of the mouth are included in San Francisco National Wildlife Refuge.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
"A" priority all year. Endangered species are present all year.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
The banks of Redwood Creek, West Point Slough and other channels are lined with cordgrass and pickleweed marshes. Large tidal flows through this creek feed other connecting sloughs and marshes. These marshes and associated mudflats support a wide variety of species including many Special Status Species.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)
Sensitive bird species found here include: Endangered - California clapper rail, California brown pelican, peregrine falcon, California least tern; Threatened - western snowy plover; California Species of Special Concern: saltmarsh common yellowthroat, Alameda song sparrow. Also, large numbers of a wide variety of birds nest and winter here: shorebirds, waterfowl, wading birds, and waterbirds.
Sensitive mammals species found here include: salt marsh harvest mouse and salt marsh wandering shrew. Harbor seals haul out along north side of creek.
The sloughs and mudflats are important habitat for fish, shellfish and infauna.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College (707) 664-0880) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX

2-365 - A Redwood Creek - Site Strategy

County San Mateo **NOAA CHART:** 18649/18650 Entrance to SF Bay **Latitude** 37 32 N **Longitude** 122 14 W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
The site includes Redwood Creek from its mouth to Hwy 101 and Westpoint Slough, and several small side channels (but not Corkscrew Slough).

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Aircraft beware of overhead power lines nearby. Vessels be aware of shallow water.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts.

The concern is oil and response impacts to marsh, wildlife, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Redwood Creek. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into marsh and mud.

SITE STRATEGIES

Strategy 2-365.1

(USCG Strategic Objective: **7,8**) **Dates:** SISRS 3/1/1995 Approved last tested ACP date 10/1/2002

Objective or Prevention
Deflect oil past, deflect to collection, protective boom for shoreline.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"
a) Deploy several 600+ ft. sections (3000 ft.) of 30 to 48-inch harbor boom with heavy anchors from Redwood Creek channel markers #3,4,5, and 6 to deflect oil back into main current and away from shore.
b) Deploy 1,500 ft. of 18-inch deflection swamp boom off both channel markers #7 and 8.
c) Deploy 5,000 ft. of 18-inch swamp boom along the north channel margin and connect with tidal barrier boom deployed in the Bair Island strategy (2-364-A). Exclude and deflect oil away from the marsh into a skimmer system located in the main channel near channel markers #9 and 10.
d) Skimmer system should be set up so that it can rearranged for flood and ebb tides.

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type		Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-365.1	3000	8000	4000	TBB	50 35/22+ & 15/40+/danforth w	2000	6	3	1 sfs	very shallow Bboats	28		7,

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
Vehicle access to margin of site is from Hwy 101, exit on Seaport Blvd and continue to Port of Redwood City or Municipal Marina.
Vessel access is from the Port or marina bayward to the mouth of Redwood Creek.

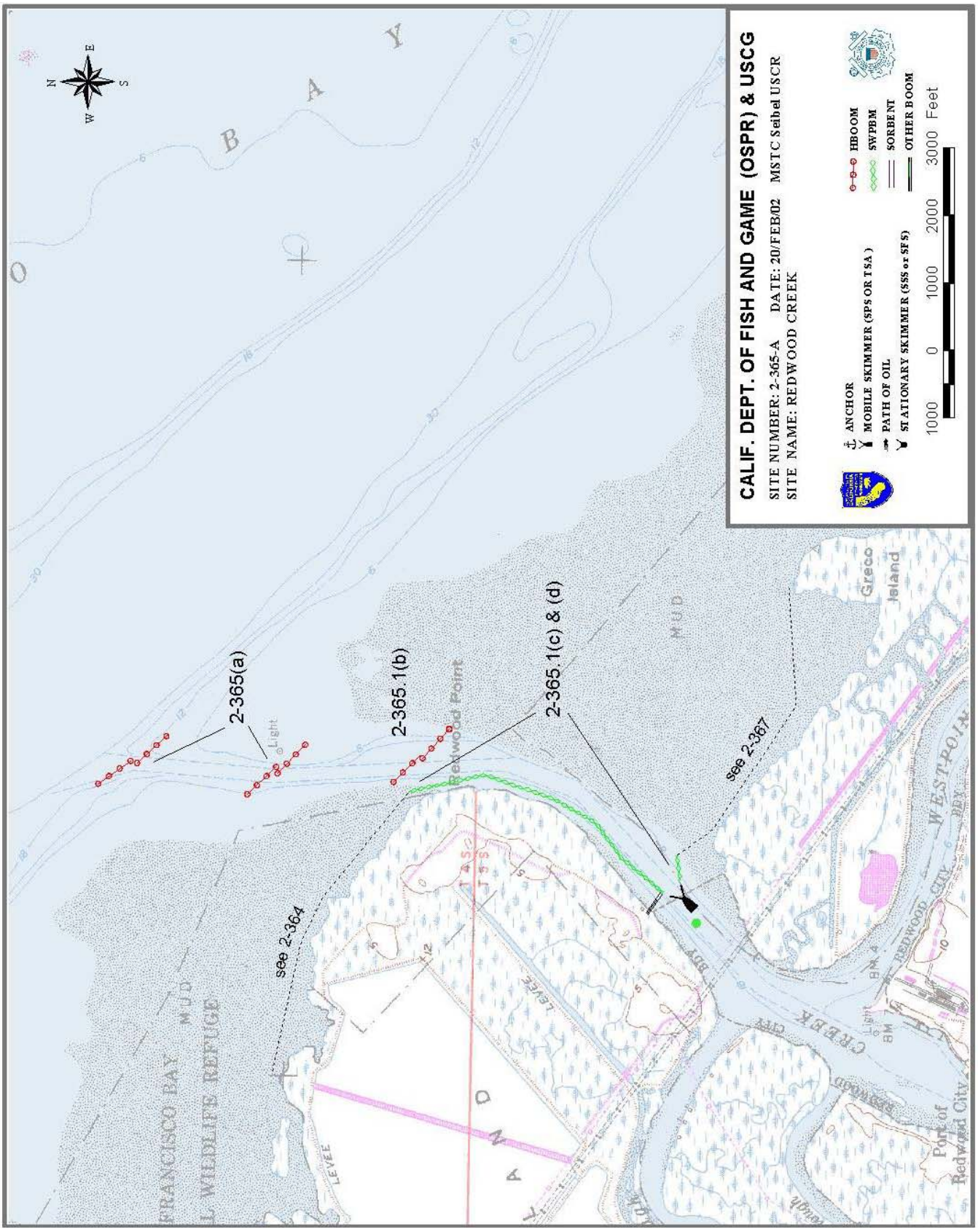
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
Foot only except at harbors.

WATER LOGISTICS:
Access limitations: depth, obstructions: Extreme shallows near shore.
Boat Launching, Loading, Docking and Services Available: On site: Redwood City Marina and Port of Redwood City.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging at Redwood City marina, harbor.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-365-A DATE: 20/FEB/02 MSTC Seibel USCR
SITE NAME: REDWOOD CREEK
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER ($SS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
1000 0 1000 2000 3000 Feet
2-365(a)
2-365.1(b)
2-365.1(c) & (d)
see 2-364
see 2-367
Redwood Point
Greco Island
WESTPOINT
Port of Redwood City
SAN FRANCISCO BAY NATIONAL WILDLIFE REFUGE
MUD
LEVEE
TASCO
TSS

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Corkscrew Slough - Site Summary 2-366 - A

County: San Mateo **GRP** 3 **Latitude** 37 31 N **Longitude** 122 14 W
USGS: Redwood Point, California **OSPR Map:** 157 **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**
Corkscrew Slough lies to the south of Bair Island and extends from Redwood Creek on the east to Steinberger Slough on the west. It is a water channel on the southwest shore of South San Francisco Bay, three miles south of the San Mateo-Hayward Bridge, on the back side of Bair Island. Primary water flow comes from Redwood Creek. Its banks are lined with cordgrass and pickleweed marsh. The easterly half of the slough is included in the San Francisco National Wildlife Refuge.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**
"A" priority all year. Endangered species are present all year. The greatest risk to harbor seals is during spring breeding season 15 March - 10 June: pups can ingest oil on female's fur during nursing; disturbance during brief lactation period (3-5 weeks) can reduce pup's survival after weaning. Moderate risk year-round from inhalation of volatile oil fractions and ingestion of contaminated prey.

RESOURCES AT RISK
HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)
Margins of the slough are cordgrass and pickleweed with fronting tidal mudflats.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)
Sensitive bird species found here include: Endangered - California clapper rail, California brown pelican, peregrine falcon, California least tern; Threatened - western snowy plover; California Species of Special Concern: saltmarsh common yellowthroat, Alameda song sparrow. Also, large numbers of a wide variety of birds nest and winter here: shorebirds, waterfowl, wading birds, and waterbirds.
Sensitive mammals species found here include: salt marsh harvest mouse and salt marsh wandering shrew. This is an important harbor seal pupping and haulout area.
The sloughs and mudflats are important habitat for fish, shellfish and infauna.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES
Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center, (Leigh Jordan, Sonoma State College (707) 664-0880) for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX

2-366 - A Corkscrew Slough - Site Strategy

County San Mateo **NOAA CHART:** 18649/18650 Entrance to SF Bay

Latitude		Longitude	
37 31	N	122 14	W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
Corkscrew Slough lies to the south of Bair Island and extends from Redwood Creek on the east to Steinberger Slough on the west.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Aircraft beware of overhead power lines nearby. Vessels be aware of shallow water and strong currents.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts.

The concern is oil and response impacts to marsh, wildlife, including seal pupping, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Corkscrew Slough. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into marsh and mud.

SITE STRATEGIES

Strategy 2-366.1

(USCG Strategic Objective: **5**) **Dates:** SISRS 3/1/1995 Approved last tested ACP date 10/1/2002

Objective or Prevention

Exclude oil from entering Corkscrew Slough.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"

a) Protect from spills coming from the Bay by implementing Redwood Creek (2-365-A) and Steinberger Slough (2-363-A) strategies. The main flow of water into Corkscrew Slough is through Redwood Creek.
b) Protection from spills inside the Port of Redwood City: Deploy 2,000 ft. of 18-inch swamp boom across slough mouth with a J-hook on the deeper, south side of the channel.
c) Deploy additional lines of sorbent boom and/or swamp boom inside the slough.

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type	Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-366.1	0	2000		15 15 / 22+/ Danforth w chain &	2000	2	0		very shallow Bboats	5		5

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
This site is accessible from water only, just bayward and across creek from Port of Redwood City. Nearest land access is Port and marina: Exit Hwy 101 on Seaport Blvd and proceed bayward to marina and Port.

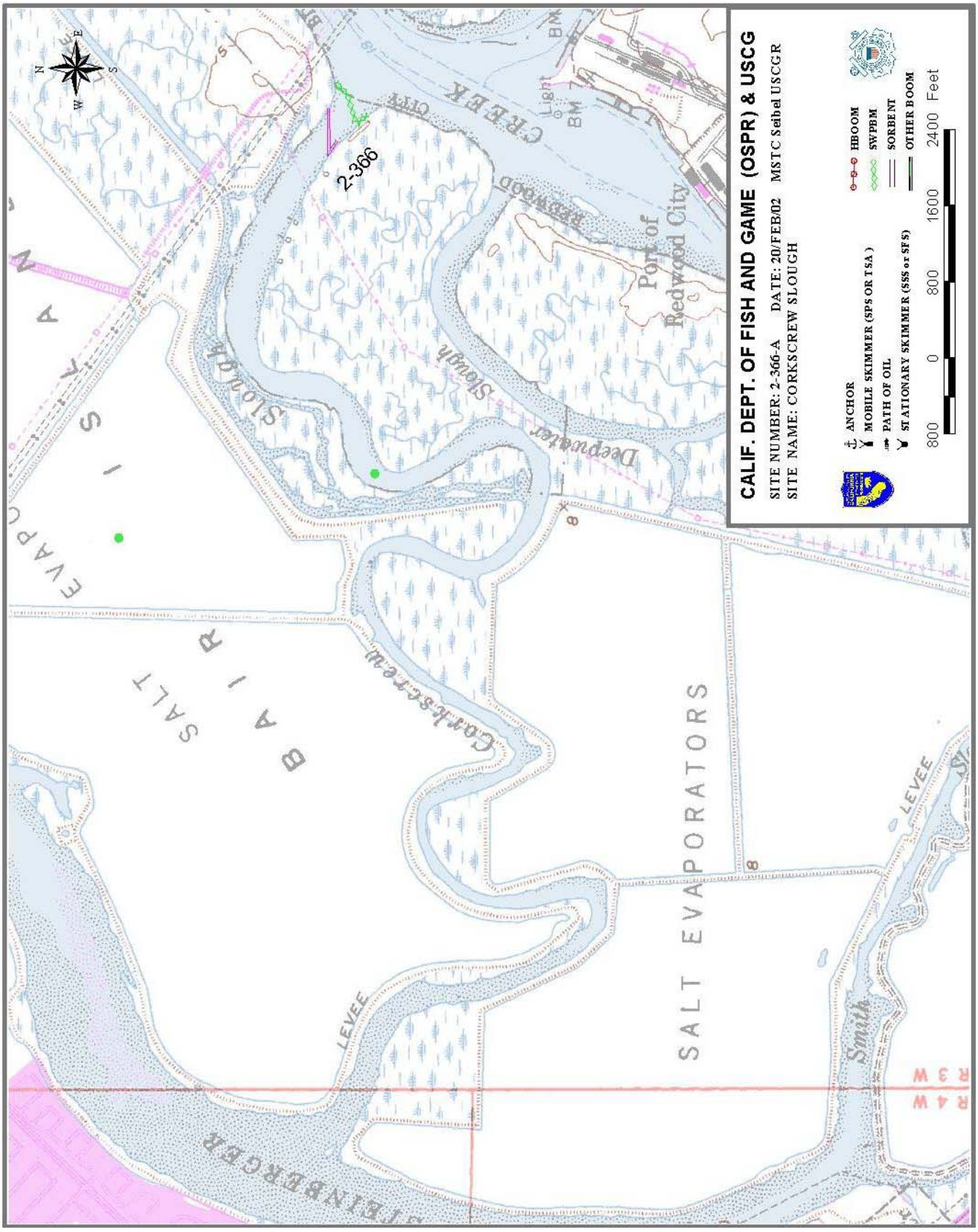
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
Foot only, vehicles at harbor nearby.

WATER LOGISTICS:
Access limitations: depth, obstructions: Very shallow near shore.
Boat Launching, Loading, Docking and Services Available: Port of Redwood City and marina.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging at Port of Redwood City. No road access to Bair Island.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS


CALIF. DEPT. OF FISH AND GAME (OSPR) & USCG
SITE NUMBER: 2-366-A DATE: 20/FEB/02 MSTC Seibel USCGR
SITE NAME: CORKSCREW SLOUGH
ANCHOR
MOBILE SKIMMER (SPS OR TSA)
PATH OF OIL
STATIONARY SKIMMER (SSS or SFS)
HBOOM
SWPBM
SORBENT
OTHER BOOM
800 0 800 1600 2400 Feet
2-366
Redwood Creek
Port of Redwood City
Deepwater Slough
Corkscrew Slough
SALT EVAPORATORS
LEVEE
Smith
R4W
R3W

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Greco Island/Ravenswood Slough - Site Summary 2-367 - A

County: San Mateo **GRP** 3 **Latitude** 37 31 N **Longitude** 122 12 W
USGS: Redwood Point, California **OSPR Map:** 157 **Last ACP Update** 10/1/2002

SITE DESCRIPTION: **(general characterization of site - geomorphology, habitat, exposure, currents)**

This site extends from the mouth of Redwood Creek to the Dumbarton Bridge and includes Greco Island, Ravenswood Slough and the marsh between the slough and Ravenswood Point. Greco Island is a saltmarsh island on the southwest shore of South San Francisco Bay, one mile northwest of the Dumbarton Bridge. It is bounded on the northwest by Redwood Creek and on the southwest by Westpoint Slough. Ravenswood Slough opens to the Bay south of Greco Island near Westpoint Slough. Fringing cordgrass/pickleweed marshes line the mouth and banks. The Greco Island site was combined with formerly designated Ravenswood Slough site due to their close proximity to each other, similar sensitivities, and combined response protection strategy.

SEASONAL and SPECIAL RESOURCE CONCERNS **(seasonal issues, special status spp present, water intakes)**

"A" priority all year. Endangered species are present all year. The greatest risk to harbor seals is during spring breeding season 15 March - 10 June: pups can ingest oil on female's fur during nursing; disturbance during brief lactation period (3-5 weeks) can reduce pup's survival after weaning. Moderate risk year-round from inhalation of volatile oil fractions and ingestion of contaminated prey.

RESOURCES AT RISK

HABITATS AT RISK: (biological habitats including time of year when most sensitive and vulnerable)

Habitats at risk include the pickleweed and cordgrass marshes of the islands and slough margins, high marsh suitable for seal rookery and haulout, and extensive mudflats, particularly on bayward margins.

SPECIES/COMMUNITIES AT RISK: (Brief summaries including time of year when most sensitive/vulnerable)

Sensitive bird species found here include: Endangered - California clapper rail, California brown pelican, peregrine falcon, California least tern; California Species of Special Concern: saltmarsh common yellowthroat, Alameda song sparrow. Also, large numbers of a wide variety of birds nest and winter here: shorebirds, waterfowl, wading birds, and waterbirds.

Sensitive mammals species found here include: salt marsh harvest mouse and salt marsh wandering shrew. Greco Island is a harbor seal haulout and rookery site. Seal number - Spring/breeding 25-60 adults + pups; nonbreeding 5-25 adults.

The sloughs and mudflats are important habitat for fish, shellfish and infauna.

CULTURAL and ARCHEOLOGICAL SENSITIVITIES

Contact the California Dept of Parks and Recreation - Office of Historic Preservation (Eric Allison (916) 653-9125), and the Northwest Information Center (Leigh Jordan, Sonoma State College (707) 664-0880), for specific information on historic or cultural resources in this area.

KEY SITE CONTACTS - type: E-ntry/access; B-iological expertise; L-ogistical; C-ultural; T-rustee; or O-ther assistance

Type	Name	Organization	Phone	FAX

2-367 - A Greco Island/Ravenswood Slough - Site Strategy

County San Mateo **NOAA CHART:** 18649/18650 Entrance to SF Bay

Latitude		Longitude	
37 31	N	122 12	W

SITE LOCATION: boundaries, landmarks, area to locate and delimit
This site extends from the mouth of Redwood Creek to the Dumbarton Bridge and includes Greco Island, Ravenswood Slough and the marsh between the slough and Ravenswood Point.

HAZARDS and RESTRICTIONS - Air, Water & Ground - things to beware of when approaching or at site
Aircraft beware of overhead power lines nearby. Vessels be aware of shallow water.

POTENTIAL OIL IMPACTS - CONCERNS/ ADVICE to RESPONDERS: regarding sensitive species present, penetration into marshes or sediments, burial, organism burrows, tidal channel spreading, watertable limitations, collateral impacts.

The concern is oil and response impacts to marsh, wildlife, including seal pups and adults, and rare and endangered birds, animals and plants which are present year-round. Primary objective is to minimize exposure by excluding oil from entering Ravenswood Slough, Westpoint Slough and small tidal sloughs. Secondary objective is to minimize exposure and impacts to bay frontage marshes by protective booming. Always of concern is the impacts resulting from response and cleanup: avoid trampling marsh and sensitive plants and animals, avoid disturbing soft mudflats, and avoid trampling oil into marsh and mud.

SITE STRATEGIES

Strategy 2-367.1

(USCG Strategic Objective: **5,8**) **Dates:** SISRS 3/1/1995 | Approved | last tested | ACP date 10/1/2002

Objective or Prevention

Exclude oil from entering various sloughs, divert oil from bay frontage.

Technique Details Check here means ( ) " No strategy diagram" ( ) "Contact CCC"

a) Protection of this site requires the use of deflection booming off the Redwood Creek channel markers as described in the Redwood Creek strategy (2-365-A).
b) Additionally, deploy 8,000 ft. of 18-inch deflection harbor boom along the outer edge of the mudflat from the prominent point by side of Greco Island south to the point on the levee between Ravenswood Point and Ravenswood Slough.
c) Deploy 10,000 ft. of exclusionary tidal barrier boom across the upper portion of the mudflat fronting the marsh of Greco Island and entrances to Ravenswood and Westpoint Sloughs. Connect boom at the north end with Redwood Creek strategy.
ALTERNATIVES: It is critical that channel entrances leading into Greco Island be blocked. If tidal barrier boom should fail or time to impact does not permit its deployment, block channel mouths with harbor boom, swamp boom, sorbent boom, or combination

Table of Response Resources

sub-strategy	harbor boom	swamp boom	other boom / type		Number and kind of Anchoring system	sorb boom	Boom boat	Skiff	No / type skimmer	Number and kind of special equipment	deploy staff	staff for tending	SO
2-367.1	8000	2000	10000	TBB	60 60/22+/danforths & stakes	2000	6	10	0	very shallow Bboats	40		5,

LOGISTICS

DIRECTIONS: to site (by land and/or by water, to nearest launch ramp and are access permits required.)
There is no vehicle access to this site. Nearest vehicle access is Port of Redwood City: Exit Hwy 101 at Seaport Blvd. and continue bayward to Port or marina. Water access is from Port or Marina immediately to the south from Redwood Creek.

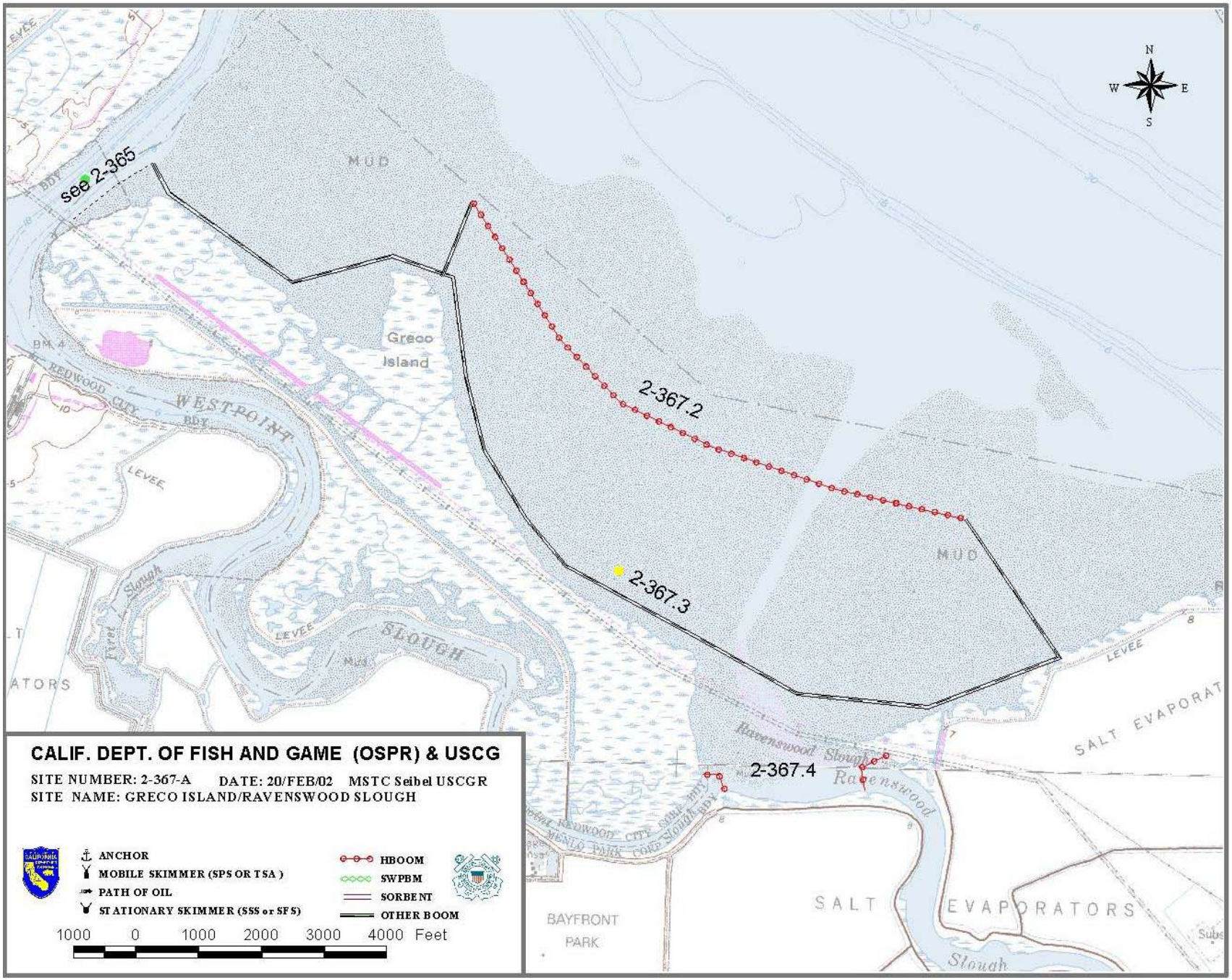
LAND ACCESS LEVEL: (foot only, 2WD, large truck, 4WD, road limitations...seasonality...locked gates)
No road access.

WATER LOGISTICS:
Access limitations: depth, obstructions: Very shallow mudflats.
Boat Launching, Loading, Docking and Services Available: Redwood City marina and Port.

FACLITIES, STAGING AREAS, POSSIBLE FIELD POSTS AND EQUIPMENT AVAILABLE:
Staging at Redwood City marina, harbor.

COMMUNICATIONS LIMITATIONS / PROBLEMS: No Problems Radio Pager Cell phone

ADDITIONAL COMMENTS



2002 San Francisco Bay & Delta: Approved January 1, 2002
9973-GRP3-87

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